



SURI VIDYASAGAR COLLEGE

(Govt. Sponsored & Constituent college of the University of Burdwan)

SURI, BIRBHUM, PIN – 731101, Ph. No. – 03462-255504

Website : surividyasagarcollege.org.in, e-mail : surividyasagarcollege1942@gmail.com

This Institution is Ragging Free

Department of Arabic

Programme Outcomes (POs)

Programme Specific Outcomes (PSOs)

Course Outcomes (COs) - Specific to Each Course

Programme Outcomes (POs) - General (Applicable to all programs)

- **Knowledge and Understanding:** Demonstrate a comprehensive understanding of the fundamental principles and theories within the field of Arabic Language and Literature.
- **Intellectual and Cognitive Skills:** Develop critical thinking, analytical, and problem-solving abilities related to Arabic language and its applications.
- **Communication and Interpersonal Skills:** Communicate effectively in both written and spoken Arabic, demonstrating excellent language proficiency.
- **Investigative and Research Skills:** Conduct research and analyse information related to Arabic language, literature, and culture effectively.
- **Professional and Ethical Behaviour:** Act ethically and professionally in all academic and professional endeavours.
- **Lifelong Learning:** Continuously update knowledge and skills in the field of Arabic Language and Literature to adapt to evolving professional and societal demands.

Programme Specific Outcomes (PSOs)

- **Fluency in Arabic:** Achieve high levels of fluency in both written and spoken Arabic, including reading, writing, listening, and speaking.
- **Cultural Understanding:** Develop a deep understanding of Arabic culture, history, and literature, including its social, political, and religious contexts.
- **Translation and Interpretation:** Acquire proficiency in translation and interpretation between Arabic and other languages, particularly English.
- **Cross-cultural Communication:** Effectively communicate and interact with people from Arabic-speaking backgrounds in diverse professional and social settings.
- **Application of Knowledge:** Apply knowledge of Arabic language and culture to various fields such as education, business, diplomacy, and research.



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Course Outcomes (COs), Specific to Each Course

Semester I

ARBC1011 - Arabic Language and Applied Grammar-I (Major Course)

- Recognize, read, and write Arabic Alphabets.
- Read short and simple sentences in Arabic.
- Differentiate between number and gender in Arabic.
- Use basic interrogative sentences in Arabic.
- Utter basic vocabulary of objects around him/her in Arabic.

ARBC1021 - Arabic Language and Applied Grammar-I (Minor Course)

- Recognize, read, and write Arabic Alphabets.
- Read short and simple sentences in Arabic.
- Differentiate between number and gender in Arabic.
- Use basic interrogative sentences in Arabic.

ARBC1031 - Elementary Arabic: Grammar and Communication (Multi/Interdisciplinary)

- Learn and pronounce the alphabets and vowel signs.
- Learn and recognize joined and split letters.
- Read short and simple sentences in Arabic.
- Use pronouns and demonstrative pronouns.
- Utter basic vocabulary of objects around him/her in Arabic.
- Write basic nominal sentences.

ARBC1041 - Communicative Arabic (AEC)

- Live and work in an Arabic-speaking environment with no previous knowledge of Arabic.
- Communicate effectively in Arabic in a wide range of situations.
- Read and write Arabic with ease.
- Develop the skills of listening, speaking, reading, and writing in a balanced way.

ARBC1051 - Translation and Basic Knowledge of Computer (SEC)

- Acquire the skills of writing simple sentences in Arabic.
- Translate sentences from Arabic to English and vice versa.
- Communicate in Arabic in a wide range of situations and to read and write Arabic with ease.
- Hone the translation skills in Arabic.
- Use computer and MS Office: Word & PP easily.

Semester II

ARBC2011 - Arabic Language and Applied Grammar-II (Major Course)

- Compose and construct Arabic sentences.



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- Read short, long, and compound sentences in Arabic.
- Understand the Arabic root system.
- Conjugate different types of verbs.
- Use nominal and verbal sentences with ease.
- Utter vocabulary of Arabic.

ARBC2021 - Arabic Language and Applied Grammar-II (Minor Course)

- Compose and construct Arabic sentences.
- Read short, long, and compound sentences in Arabic.
- Understand the Arabic root system.
- Conjugate different types of verbs.
- Use nominal and verbal sentences with ease.
- Utter vocabulary of Arabic.

ARBC2031 - Advanced Arabic Grammar and Functional Arabic (Multi/Interdisciplinary)

- Compose and construct basic Arabic sentences.
- Read simple sentences in Arabic.
- Understand the basic structure of the Arabic language.
- Use nominal and verbal sentences with ease.
- Utter vocabulary of objects in and around him/her in Arabic.

Semester III

ARBC3011 - Arabic Text and Advance Grammar-I (Major Course)

- Compose and construct Arabic sentences.
- Read short, long, and compound sentences in Arabic.
- Understand the Arabic root system.
- Conjugate different types of verbs.
- Use nominal and verbal sentences with ease.
- Utter vocabulary of Arabic.

ARBC3012 - History of Modern Arabic Literature (Major Course)

- Understand the cultural, historical, and literary aspects of modern Arabic society.
- Analyse the major literary movements, themes, and styles.
- Become familiar with the key authors and their works.

ARBC3041 - Advanced Communicative Arabic (AEC)

- Live and work in an Arabic-speaking environment with no previous knowledge of Arabic.
- Communicate effectively in Arabic in a wide range of situations.
- Read and write Arabic with ease.
- Develop the skills of listening, speaking, reading, and writing in a balanced way.



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ARBC3051 - Advanced Composition & Translation (SEC)

- Acquire the skills of writing in Arabic.
- Translate sentences from Arabic to English and vice versa.
- Communicate in Arabic in a wide range of situations and read and write Arabic with ease.
- Hone the translation skills in Arabic.

Semester IV

ARBC4011 - Arabic Text & Advanced Grammar-II (Major Course)

- Compose and construct Arabic sentences.
- Read short, long, and compound sentences in Arabic.
- Understand the Arabic root system.
- Conjugate different types of verbs.
- Use nominal and verbal sentences with ease.
- Utter vocabulary of Arabic.

ARBC4012 - History of Arabic Literature During Abbasid Period (Major Course)

- Understand the cultural, historical, and literary aspects of Arabic society during the Abbasid period.
- Analyse the major literary movements, themes, and styles.
- Become familiar with the key authors and their works.
- Introduce the house of wisdom and its role in arts, culture, translation, and literature.

ARBC4013 - Development of Arabic Reading & Writing Skills (Major Course)

- Compose and construct Arabic sentences.
- Improve writing and reading skills.
- Foster creativity and originality in written and oral expression.
- Strengthen grammar, vocabulary, and sentence structure.

ARBC4021 - Arabic Language and Applied Grammar-III (Minor Course)

- Compose and construct basic Arabic sentences.
- Read simple sentences in Arabic.
- Understand the basic structure of the Arabic language.
- Use nominal and verbal sentences with ease.
- Utter vocabulary of objects in and around him/her in Arabic.



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Department of Bengali

Programme Outcomes and Course Outcomes

B.A. Bengali (Major & Minor)

Programme Objectives:

1. Educate Students in both artistry and utility of the Bengali Language and Literature.
2. Provide students with the critical faculties necessary in an academic environment, on the job and in increasing complexity.
3. Graduate and Honours Graduate students who are capable of performing research, analysis, criticism of literature and cultural texts of different historical periods.
4. Assist the students in the development of intellectual flexibility, creativity, and cultural literacy, so that they may engage themselves in life-long learning.

Outcomes:

1. Students should be familiar with the representative literary and cultural texts within historical and cultural contexts.
2. Students should be able to apply critical and theoretical approaches to the reading and analysis of literary and cultural texts in multiple genres.
3. Students should be able to identify, analyze, interpret and describe the critical ideas values and themes that appear in the literary texts.
4. Students should be able to write analytically in a variety of formats, including essays, research papers, reflective writings and reviews.
5. Students should be able to gather knowledge, understand, evaluate and synthesize information from a variety of written sources.
5. Students also are able to understand the process of communicating and interpreting human experiences through literary representation.



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Department of English Programme Outcomes and Course Outcomes

Semester I

MAJOR COURSE

ENGL1011: Introduction to Poetry and Prose

COURSE OBJECTIVE:

The objective of this course is to introduce students to major literary forms and encourage an appreciation of the various thematic and stylistic aspects of these forms. Students will also be introduced to various genres and sub-genres of poetry, drama and fiction. The course also introduces students to a range of simple but significant poems, essays and short stories. Moreover, the course also offers a component on rhetoric and prosody in order to enable students to better understand the elements of style in English composition, particularly in poetry. The primary objective of the course is to acquaint students with major literary forms and some seminal but short literary texts, and to encourage them to develop strategies of critical reading.

COURSE OUTCOME:

It is desired that the course will inculcate in students a love for literature and an appreciation of the nuanced texture and stylistic elements of literary texts.

MINOR COURSE

ENGL1021: Poems, Essays and Short Stories, Rhetoric and Prosody

COURSE OBJECTIVE:

The objective of this Minor course is to acquaint students with a few English literary texts, which, despite their brevity, are among the finest works of their kind. The two short stories are by Indian authors whose writing is integral to the canon of Indian writing in English. The idea is to introduce and develop the awareness that today the implications of the term 'English literature' extend into former colonies of the Empire such as India.

COURSE OUTCOME:

It is expected that students choosing this Minor course will learn to develop skills necessary for critical appreciation of literary texts.

SKILL ENHANCEMENT COURSE (SEC)

ENGL1051: English Grammar and Vocabulary

COURSE OBJECTIVE:

The objective of this course is to establish for students the importance of grammar, and acquaint them with a few major approaches to grammar. The course also revisits aspects of English grammar that many students might have learnt at some earlier stage, with the intention of encouraging fresh perspectives on usage. Enhancement of vocabulary also features among the course objectives.

COURSE OUTCOME:



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It is believed that the course will help students develop fresh perspectives on grammar and the skills necessary for correct English usage.

Semester II

MAJOR COURSE

ENGL2011: Plays, Novels, and Literary Terms

COURSE OBJECTIVE:

The primary objective of this Major course is to encourage a close critical study of key thematic elements and stylistic features in select plays and novels, without studying these texts in their literary, political and socio-cultural contexts. The course is also designed to acquaint students with some of the terms related to poetry, drama and fiction which they may encounter in the later semesters during their study of literary texts.

COURSE OUTCOME:

The course will equip students with the intellectual apparatus required to face the challenges of reading and interpreting literary texts. The acquaintance with some of the most frequently encountered literary terms will help them in the course of such reading and interpretation

MINOR COURSE

ENGL2021: Plays and Novels

COURSE OBJECTIVE:

The objective of this Minor course is to encourage students to recognize key thematic elements and stylistic features in select plays and novels, without studying these texts in their literary, political and socio-cultural contexts.

COURSE OUTCOME:

The course will prepare students for a meaningful critical appreciation of plays and novels, and develop an understanding of how plays and novels employ different methods of telling stories.

SKILL ENHANCEMENT COURSE (SEC)

ENGL2051: Creative Writing

COURSE OBJECTIVE:

This course seeks to make students conversant with various forms, principles and processes of creative writing, and, by doing so, encourage them to critically appreciate and practise such writing.

COURSE OUTCOME:

Students studying this course will emerge from it with an awareness of what constitutes creative writing in its various forms. In addition to that, students may feel encouraged to try their hand at creative writing themselves.

Semester II

MAJOR COURSE

ENGL3011: History of English Literature

COURSE OBJECTIVE:

The objective of this course is to acquaint students with the evolution of English literature in England. The course traces this evolution from the early writings of the Anglo-Saxons all the way down to 1990. The idea behind the course



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is to ensure that students are equipped with necessary information about the major currents and cross-currents of literary traditions that mark this long period of literary activity in England as well as the literary, socio-cultural and political backgrounds that have had significant bearings on literature.

COURSE OUTCOME:

The course is designed to ensure that students are able to understand the route that literary writing has taken in England. This history is important for students since it provides an indispensable background against which they may set and better appreciate individual literary texts.

MAJOR COURSE

ENGL3012: British Poetry from Elizabethan to Pre-Romantic

COURSE OBJECTIVE:

The objective of this course is not only to introduce students to some major specimens of English poetry written across almost two hundred years but also to illustrate the ideological shifts that influence the change from Early Modern writing to Neoclassical writing and then inspire a reaction against Neoclassicism and introduce Pre-Romanticism.

COURSE OUTCOME:

The course will familiarise students with some of the most important authors and texts in the history of English literature. Students will be intellectually equipped to read and interpret literary works of later ages in the light of the literary movements that mark the trajectory from the Elizabethan age to the age of Pre-Romanticism.

SKILL ENHANCEMENT COURSE (SEC)

ENGL3051: Introducing Translation Studies

COURSE OBJECTIVE:

The objective of this course is to establish for students the importance of translation, and acquaint them with different types of translation. The course also offers a thorough knowledge about the process of translation and it also encourages the students to learn the skills of translating texts from one language to another.

COURSE OUTCOME:

It is expected that the course will help students to develop a proper understanding of the process of translation and also enable them to acquire the basic skills required for translating various kind of texts.

Semester IV

MAJOR COURSE

ENGL4011: British Drama from Elizabethan to Restoration

[COURSE OBJECTIVE:

This course will teach four plays written in England over a period of a little over a century, and intends to make students conversant with the traditions of playwrighting and performance in the dramatic genres of tragedy and comedy. Students may also be briefly introduced to the cultures of playgoing in England during the years that the course covers.

COURSE OUTCOME:

It is expected that the course will equip students with knowledge of some of the seminal dramatic texts in English literature and with the ability to appreciate theatre and its possibilities.



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MAJOR COURSE

ENGL4012: British Novels, Essays and Short Stories

COURSE OBJECTIVE:

The primary objective of this Major course is to encourage a critical study of key works of fiction and non-fiction written in the nineteenth and twentieth centuries. Students will be introduced to major themes, matters of character and plot, and also to literary, political and socio-cultural contexts.

COURSE OUTCOME:

The course will equip students with the intellectual apparatus required to face the challenges of reading and interpreting English fictional and non-fictional prose.

MAJOR COURSE

ENGL4013: British Poetry from Romantic to Modern

COURSE OBJECTIVE:

This course engages with some very important traditions of English poetry in the nineteenth and early twentieth centuries. The objective is to encourage a close critical study of key thematic elements and stylistic features in the prescribed poems, as also an understanding and appreciation of these poems in their literary, political and socio-cultural contexts.

COURSE OUTCOME:

The course will equip students with the ability to read and critically appreciate English poetry written in the nineteenth and early twentieth centuries. Students are expected to use the knowledge and interpretive skills acquired from this course in their further study and evaluation of poetry.

MINOR COURSE

ENGL4021: Indian Writing in English

COURSE OBJECTIVE:

The objective of this Minor course is to introduce students to some of the important literary/non-fictional texts belonging to the tradition of Indian English Literature. It will enable students to appreciate the thematic and stylistic features of these texts. The idea is to develop an awareness of the notion of Indianness that is integral to the formation of these texts.

COURSE OUTCOME:

The course will prepare students for a meaningful critical appreciation of some of the Indian English texts and develop an understanding of how these texts employ different methods of telling stories or narrativising experiences that are India-specific.



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Department of History Programme Outcomes and Course Outcomes

Programme Outcomes (PO) :

The History programme will equip students with the ability to:

1. Develop critical thinking and analytical skills.
2. Gain a deep understanding of historical processes and their relevance to the present.
3. Cultivate research abilities, including data collection, analysis, and interpretation of historical sources.
4. Engage with historical literature and primary sources to form evidence-based perspectives.
5. Understand and appreciate diverse cultural, social, and political histories from global, regional, and local contexts.
6. Enhance communication and argumentation skills through presentations and written assessments.

Programme Specific Outcome (PSO) :

Graduates of the History program will:

1. Demonstrate proficiency in specific historical periods (Ancient, Medieval, Modern, or Contemporary).
2. Be able to apply historical knowledge to interpret current global and local issues.
3. Develop specialized skills in archival research, historical documentation, and public history.

Major discipline is the discipline or subject of main focus and the degree will be awarded in that discipline. Students should secure the prescribed number of credits (about 50% of total credits) through core courses in the major discipline. Minor discipline helps a student to gain a broader understanding beyond the major discipline.

Course Outcome (CO) :

Upon completion of the History course, students will be able to demonstrate a comprehensive understanding of historical events, contexts, and their impact on contemporary society. They will critically analyze primary and secondary sources, develop research skills, and engage with historical narratives to understand the evolution of human



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societies, cultures, and institutions. Students will also learn to apply historical methods to examine socio-political, economic, and cultural changes across different periods

SEMESTER-I, HISTORY (MAJOR)

Course Code HIST 1011

Paper I- History of India I (From Earliest Times to 600 BCE)

Through this course, students will get to know about the lifestyle, culture, religion and language of ancient India. They will be able to find various types of events in the past life of ancient India. They will also acquire the knowledge of changing socio-cultural scenarios of India.

SEMESTER-I, HISTORY (SKILL ENHANCEMENT COURSE)

Course Code HIST 1051

Paper I- History Understanding Indian Heritage

Students will get to understand the different facets of Indian heritage and their significance. They also understand about the legal and institutional frameworks for heritage protection in India as the challenges facing it.

SEMESTER-I, HISTORY (MINOR)

Course Code HIST 1021

Paper I- Ancient Indian History up to 550 CE

The course aims to provide the fundamental knowledge of different aspects of Ancient Indian History.

SEMESTER-I, HISTORY (MULTI/ INTERDISCIPLINARY COURSE)

Course code HIST 1031

Paper I- History of India (1757 to 1857)

The main objective of this course is to know the history of how the English East India Company became the ruler of India. This course aims to reassess how they ruled our country for one hundred years. Furthermore, it also seeks to revisit the history of how native Indians revolted against them.

SEMESTER-II, HISTORY (MAJOR)

Course Code HIST 2011

Paper II- History of Ancient World Civilization

Through this course students will acquire knowledge about the evolution of human society and transformation of ancient civilizations like Mesopotamia, Egypt, China, Greece, Roman and early Medieval Europe. They are acquiring knowledge about the origin, features, nature and class composition of various societies. They can compare to each and other among the several societies of the world.



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SEMESTER-II, HISTORY (SKILL ENHANCEMENT COURSE)

Course Code HIST 2051

Paper II- Archives and Museums

Students will learn how to maintain documentary, visual and material remains of the past either in house or Institutions. It helps them to understand the importance and significance of such institutions to build the history of India.

SEMESTER-II, HISTORY (MINOR)

Course Code HIST 2021

Paper II- History of India (From 550 C.E to 1206 C.E)

From this course students will learn and analyse about the transition from historic centuries upto the Early Medieval india. They will be able to delineate changes in the realm of polity and culture; Puranic religion; the growth of vernacular languages and newer forms of art and architecture.

SEMESTER-II, HISTORY (MULTI/ INTERDISIPLINARY COURSE)

Course code HIST 2031

Paper II- History of India (1858-1947)

History of India (1858-1947) Learning outcome: Through this course students will know about the various positive and negative aspects of British rule. Who knows the history of how the British followed the policy of partition and destroyed the dream of a united India of the freedom fighters of India.

SEMESTER-II, HISTORY (MAJOR)

SEMESTER-III, HISTORY (MAJOR)

Course Code HIST 3011

Paper III- History of India from 6th Century BCE to 550 CE

The objectives of the course are to impart a comprehensive knowledge and understanding of history and culture of India up to 550 CE. The course introduces sources for the study, early culture and civilizations, development of different religious traditions, evolution of Ancient Indian polity with major political events, political geography and chronology. It also deals with the age of foreign incursions, structure of early Indian society and the nature of economic transformation. Focus is also placed on analysis and explanation of Ancient India 'sculptural achievements.

Students will have a familiarity with the sources, different political, social, economic, cultural and religious traditions of the Indian subcontinent up to 550 C.E. Student will also be well versed with different analytic al approaches and models of interpretation.

SEMESTER-II, HISTORY (MAJOR)



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Course Code HIST 3012

Paper IV- World Civilization: Transition from Ancient to Medieval

This course seeks to understand the transition of Ancient Europe into the medieval world. It therefore looks at the crisis caused by the decline of Roman Empire, the rise of religious organizations such as the Church and Monastery, the Carolingian and 12th century renaissance, and the rise of Universities and Towns. It addresses the ushering of Feudalism and its breakdown and finally deals with the crisis of Judaism and Christianity facing the advent of Islam and the counter attack, Crusades.

SEMESTER-III, HISTORY (SKILL ENHANCEMENT COURSE)

Course Code HIST 3051

Paper III- Understanding Popular Culture of Modern Bengal

This paper seeks to provide an opportunity to the students to explore the various facets of popular culture within their region in different genres such as the performing arts, audio-visual entertainments that would provide them a better understanding of the cultural diversity of Bengal.

SEMESTER-II, HISTORY (MULTI/ INTERDISCIPLINARY COURSE)

Course code HIST 3031

Paper III-History of Modern Europe (1789-1919)

The students will be able to analyze the historical developments in Europe between 1789-1919. As it focuses on the democratic & socialist foundations of modern Europe. They will be able to situate historical developments of socialist upsurge & the economic forces of the wars, other ideological shifts.

Prepared by Dr. Amiya Ghose, Former Head, Department of History

Presented by Dr. Partha Sankha Mazumdar, Present Head, Department of History

DEPARTMENT OF GEOGRAPHY

Program outcomes, Program specific outcomes, Course Outcomes

Under Curriculum and Credit Framework for Undergraduate Programmes (CCFUP) as per NEP, 2020

Program outcomes:

The undergraduate program of Geography helps student to get a knowledge base in the following ground of Geography-

Students will be able to get a theoretical understanding of physical geographical processes and their changing pattern over space and time; different landform development processes and related theories.

Acquire knowledge about different aspects of human geography viz. Population growth; factors influencing population growth and distribution, population pattern and population structure; population compositions etc.



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Students will have some understanding of theoretical, practical and methodological understanding of both physical and human geography. Besides students will also develop some practical knowledge about the different field techniques and use of instruments like- dumpy level, prismatic compass, theodolites etc.

Able to acquire some theoretical and practical knowledge of Remote sensing and GIS.

Program specific outcomes:

Students will able to acquire knowledge about different landform development theories; land form building processes; pattern of landforms at local, regional, national as well as global scale.

Students will build theoretical knowledge of the environmental systems, process, space, place and their importance in geography. Students will able to understand demographic principles, their changing pattern over space and time.

Students will know about the environmental setup; causes of environmental pollution and degradation; policies and strategies to control environmental pollution and degradation. Students will gain some knowledge about the cartographic and statistical and geographical practical knowledge.

Course Outcomes:

SEMESTER-I

(MAJOR)

COURSE 1 COURSE TITLE: GEOTECTONICS AND GEOMORPHOLOGY (CODE: GEOG 1011) (Theory)

Students will –

1. Gain an understanding of the Earth's internal structure, including insights from seismological evidence, and its significance in geodynamic processes.
2. Learn and evaluate the concepts of isostasy as proposed by Airy and Pratt, explaining crustal balance and topographic variations.
3. Analyze major tectonic theories, including continental drift, sea-floor spreading, and plate tectonics, and their role in processes like volcanism, earthquakes, and mountain building.
4. Classify and explain the origin of folds and faults, understanding their implications for Earth's surface deformation.
5. Understand geomorphic processes, including weathering and mass movement, and their role in shaping resultant landforms.



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6. Critically evaluate theories of landscape evolution by Davis, Penck, and Hack and their applications in geomorphology.
7. Compare and assess slope development theories proposed by King and Wood.
8. Explore and analyze processes and landforms associated with fluvial and coastal environments, along with drainage patterns in uniclinal and folded structures.

(MINOR)

COURSE TITLE: GEOTECTONICS AND GEOMORPHOLOGY (CODE: GEOG 1021) (Theory)

Students will –

1. Gain an understanding of the Earth's internal structure, including insights from seismological evidence, and its significance in geodynamic processes.
2. Learn and evaluate the concepts of isostasy as proposed by Airy and Pratt, explaining crustal balance and topographic variations.
3. Analyze major tectonic theories, including continental drift, sea-floor spreading, and plate tectonics, and their role in processes like volcanism, earthquakes, and mountain building.
4. Classify and explain the origin of folds and faults, understanding their implications for Earth's surface deformation.
5. Understand geomorphic processes, including weathering and mass movement, and their role in shaping resultant landforms.
6. Critically evaluate theories of landscape evolution by Davis, Penck, and Hack and their applications in geomorphology.
7. Compare and assess slope development theories proposed by King and Wood.
8. Explore and analyze processes and landforms associated with fluvial and coastal environments, along with drainage patterns in uniclinal and folded structures.

MULTIDISCIPLINARY COURSES (MDC)

COURSE TITLE: PHYSICAL GEOGRAPHY (CODE: GEOG 1031) (Theory)

Students will –

1. Understand the internal structure of the Earth and its role in shaping the planet's surface.



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2. Learn about geomorphic processes like weathering, erosion, and their impact on the formation of various landforms.
3. Analyze the processes and resultant landforms associated with fluvial, glacial, and aeolian systems.
4. Comprehend the composition and structure of the atmosphere and the dynamics of insolation, heat budget, and temperature distribution.
5. Gain knowledge of the hydrological cycle and its significance in the Earth's physical systems.
6. Study soil-forming factors, soil classification (zonal, azonal, and intrazonal), and natural vegetation types and their distribution.

SKILL ENHANCEMENT COURSE (SEC)

COURSE TITLE: COMPUTER BASICS AND COMPUTER APPLICATIONS (CODE: GEOG 1051)

(Practical)

Students will –

1. Understand numbering systems and perform binary arithmetic operations.
2. Learn data computation, storage, and formatting techniques in spreadsheets, including the calculation of rank, mean, median, mode, and standard deviation.
3. Compute and interpret moving averages, correlation, covariance, and regression using appropriate techniques and tools in MS Excel.
4. Prepare and analyze annotated diagrams, such as scatter diagrams and histograms, for data visualization and interpretation.
5. Develop skills in internet surfing to generate and extract relevant information for academic and professional purposes.

SEMESTER II

(MAJOR)

COURSE TITLE: POPULATION AND SETTLEMENT GEOGRAPHY (CODE: GEOG 2012)

Students will –

1. Understand the development of Population and Settlement Geography and its interrelation with Demography.
2. Learn the determinants of population dynamics, including fertility, mortality, and migration, and their implications for spatial population distribution.
3. Analyze measures of fertility and mortality and evaluate population theories, including Malthusian, Marxian, and Demographic Transition Theory.



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4. Study migration by exploring its theories, causes, types, and role in shaping population patterns.
5. Understand population composition (age-sex structure, occupational structure) and evaluate population policies of countries like India and Sweden.
6. Learn the characteristics and morphology of rural settlements, including site, situation, types, and patterns.
7. Study urban settlements, focusing on urban morphology, sprawl, and models like Burgess, Hoyt, and Harris and Ullman.
8. Explore Central Place Theory, settlement hierarchy, urban primacy, and the dynamics of rural-urban interactions, including peri-urban and rural concepts.

(MINOR)

COURSE TITLE: POPULATION AND SETTLEMENT GEOGRAPHY (CODE: GEOG 2022)

Students will –

1. Understand the development of Population and Settlement Geography and its interrelation with Demography.
2. Learn the determinants of population dynamics, including fertility, mortality, and migration, and their implications for spatial population distribution.
3. Analyze measures of fertility and mortality and evaluate population theories, including Malthusian, Marxian, and Demographic Transition Theory.
4. Study migration by exploring its theories, causes, types, and role in shaping population patterns.
5. Understand population composition (age-sex structure, occupational structure) and evaluate population policies of countries like India and Sweden.
6. Learn the characteristics and morphology of rural settlements, including site, situation, types, and patterns.
7. Study urban settlements, focusing on urban morphology, sprawl, and models like Burgess, Hoyt, and Harris and Ullman.
8. Explore Central Place Theory, settlement hierarchy, urban primacy, and the dynamics of rural-urban interactions, including peri-urban and rural concepts.

MULTIDISCIPLINARY COURSES (MDC)

COURSE TITLE: HUMAN GEOGRAPHY (CODE: GEOG 2032) (Theory)



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Students will –

1. Understand the patterns of population distribution, density, and growth.
2. Analyze the types and causes of population migration and their impact on human geography.
3. Explore various economic activities, including primary, secondary, and tertiary sectors, and their spatial significance.
4. Learn about the types, patterns, and characteristics of rural and urban settlements.
5. Study the major ethnic groups of the world and the processes of cultural diffusion.
6. Evaluate indicators of human development and their role in assessing socio-economic progress.

SKILL ENHANCEMENT COURSE (SEC)

COURSE TITLE: FIELD SURVEY TECHNIQUES (CODE: GEOG 2052) (Theory)

Students will –

1. Understand the role and significance of fieldwork in geographical studies, including the ethics involved and the process of selecting study areas and objectives.
2. Learn to prepare survey schedules and design questionnaires (open, closed, structured, and non-structured) for effective data collection.
3. Develop skills in conducting interviews and focused group discussions for qualitative data acquisition.
4. Gain knowledge of field techniques and tools, including landscape surveys using transects and quadrants, sketch construction, and photo/video recording.
5. Learn methods of sample collection, preparation of inventory from field data, and performing post-field tasks such as data organization and analysis.

SEMESTER-III

(MAJOR)

COURSE TITLE: GEOGRAPHY OF INDIA (CODE: GEOG 3011) (Theory)

Students will -

1. India's geological setup, physiography, and drainage systems.
2. Climate patterns, monsoons, soils, and vegetation distribution.



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3. Agricultural regions, the Green Revolution, and industrial development.
4. Mineral and energy resource distribution and regionalization theories.
5. Population dynamics, growth, and policy impacts.
6. Population Problems: Poverty and Unemployment.

(MAJOR)

COURSE TITLE: CARTOGRAPHY & SURVEYING (CODE: GEOG 3012) (PR)

Students will -

1. Understand map scales, thematic mapping, and cartographic techniques.
2. Construct and interpret various scales, diagrams, and thematic maps.
3. Represent data using methods like proportional symbols, isolines, and choropleth maps.
4. Prepare and analyze Climographs, Hythergraphs, and Ergographs.
5. Perform basic surveying, calculate bearings, and correction of traverse errors.
6. Conduct contouring and profile drawing using Dumpy level and Digital levelling instrument.
7. Measure heights and distances of objects using a Transit Theodolite for accessible and inaccessible bases.
8. Determine ground slopes with an Abney level and Calculate strike and dip of geological features using a Brunton Compass.

MULTIDISCIPLINARY COURSE (MDC)

COURSE TITLE: ENVIRONMENTAL GEOGRAPHY (CODE: GEOG 3031)

Students will -

1. Understand key concepts and approaches in Environmental Geography.
2. Explain the structure and functions of ecosystems.
3. Analyze causes and solutions for soil pollution and its management.
4. Assess solid waste pollution and propose effective management strategies.
5. Evaluate marine pollution and recommend sustainable management practices.

SKILL ENHANCEMENT COURSE (SEC)

COURSE TITLE: BASICS OF RS & GIS (CODE: GEOG 3051)

Students will –

1. Understand the principles, platforms, and types of remote sensing.
2. Explain EMR interaction and the functioning of satellites and sensors like Landsat and IRS.
3. Perform georeferencing of scanned maps.
4. Digitize spatial features such as points, lines, polygons, and administrative boundaries.



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(MAJOR)

COURSE TITLE: CLIMATOLOGY (CODE: GEOG 4011)

Students will –

1. Understand the composition, structure, and thermal dynamics of the atmosphere.
2. Analyze solar radiation, heat balance, and temperature variations, including inversion and adiabatic changes.
3. Explain atmospheric stability, instability, and the greenhouse effect.
4. Describe atmospheric moisture, condensation processes, and cloud formation.
5. Examine precipitation mechanisms and forms, including key theories.
6. Classify air masses and analyze atmospheric circulation patterns, including planetary winds and jet streams.
7. Understand monsoons, their mechanisms, and associated phenomena.
8. Analyze tropical and mid-latitude cyclones, thunderstorms, and their impacts.

(MAJOR)

COURSE TITLE: ECONOMIC GEOGRAPHY (CODE: GEOG 4012)

Students will –

1. Understand key concepts and approaches in Economic Geography, including goods, services, production, and consumption.
2. Analyze the significance, classification, and conservation of resources, and assess the impact of resource depletion.
3. Evaluate factors influencing the location of economic activities, agglomeration forces, and location theories by Von Thünen and Alfred Weber.
4. Explore the classification and dynamics of primary, secondary, and tertiary economic activities.
5. Study marketplace theories by Losch and Palander and their applications.
6. Examine international trade blocs (WTO, OPEC, SAARC, BRICS) and their role in global trade and cooperation.

(MAJOR)

COURSE TITLE: MAP PROJECTION & MAP ANALYSIS (CODE: GEOG 4013) (PR)

Students will –

1. Understand coordinate systems, the concepts of geoid and spheroid, and the significance of UTM projection.
2. Classify and evaluate map projections, their properties, and uses, including constructing various types of projections like Polar Zenithal Stereographic, Mercator's, and Cylindrical Equal Area.
3. Learn about generating globes, grids, and systems of measurement for mapping.
4. Interpret and analyze Survey of India topographical maps, including delineating drainage basins, relief, slope, and stream order.
5. Construct and interpret relief profiles and maps for relative relief, slope, drainage density, and stream ordering.
6. Understand the elements of geological maps and draw geological cross-sections for different structural formations.



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7. Calculate true and apparent dips, and identify geological structures, including faulted structures, and their topographical correlation.

(MINOR)

COURSE TITLE: FUNDAMENTALS OF CLIMATOLOGY AND BIO-GEOGRAPHY (CODE: GEOG 4021)

Students will –

1. Understand the elements of weather and climate, and the thermal and chemical composition of the atmosphere.
2. Analyze the horizontal and vertical distribution of temperature and the dynamics of pressure belts and planetary winds.
3. Examine the different forms of precipitation and types of rainfall.
4. Explore the theories of monsoon and the specific characteristics of the Indian monsoon.
5. Study the physical properties of soil, soil formation, and the characteristics of soil profiles.
6. Understand soil degradation, conservation practices, and the importance of sustainable soil management.
7. Learn about ecosystems, energy pyramids, and the functioning of food chains and food webs.

Mass Communication and Journalism Department

Programme outcomes, Course Outcomes

Programme outcomes:

Program outcomes examine what a program or process is to do, achieve, or accomplish for its own improvement and/or in support of institutional or divisional goals.

Syllabus Under Curriculum and Credit Framework for UG Programmes (CCFUP) as per NEP, 2020

This department is providing education towards students through six and eight semesters. The entire duration to complete this course is 4 years. It is a under graduation course where teachers are trying to teach students by following the syllabus which is provided by the Burdwan University. The university provided only 4 semester's routine.

Semester I is composed of:

Major Course: Introduction to Media Studies

Multidisciplinary Course: Media Management

Skill Enhancement Course (SEC): Print Production

Semester II is composed of:

Major Course: History of Indian Media

Multidisciplinary Course: Media Reporting



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Skill Enhancement Course (SEC): Radio Production

Semester III is composed of:

Major Course 1: Advertising and Marketing Communication

Major Course 2: Public Relations & Corporate Communication

Multidisciplinary Course: Basics of Media Writing

Skill Enhancement Course (SEC): Television Production

Semester IV is composed of:

Major Course 1: Legal Studies and Mass Media

Major Course 2: Globalization & Media Industry

Major Course 3: Digital Media

Major papers are consisting of 75 marks which is parted as 60+10+5. 60 is for theory paper, 10 is for Internal assessment and 5 is for Attendance. Where the teachers can take total 60 hours of classes to complete each paper.

SEC papers are consisting of 50 marks which is parted as 40+10. Where the teachers can take total 45 hours of classes to complete each paper.

MDC papers are consisting of 50 marks which is parted as 40+10. Where the teachers can take total 45 hours of classes to complete each paper.

Semester wise programme outcomes:

After completion of these paper the students will be able to understand these following papers

Semester I:

Major Course: Introduction to Media Studies

- basic concept of communication
- different theories and models of communication in different approaches
- the significance of mass communication
- how the media shapes the distribution of power and knowledge in the society in recent time.

Multidisciplinary Course: Media Management

Media management course, which is a branch of business management, provides a curriculum of various aspects on dealing with business strategies, digital business, media market and research analytics. The course will provide the knowledge and skills of media management-related subjects for successfully shaping its student's future career. This course program will help the students to develop an understanding and experience on the production, marketing, finance, and operations in the field of media management.



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Semester II:

Major Course: History of Indian Media

- Unit – 1 : Provide make a clear picture of early days of Indian press before Independence
- Unit – 2 : the role of different contemporary press in Indian National Movement
- Unit – 3: different aspects of major controversial issues regarding publications
- Unit – 4 : the press freedom and their improvements
- Unit – 5 : clarify the evolution of mass media in post-independence era

Multidisciplinary Course: Media Reporting

- Unit – 1: can understand the basic concepts of media reporting.
- Unit – 2: The different aspects of print media reporting.
- Unit – 3: clear idea regarding the structure and presentation style of reporting for audio media, i.e. radio.
- Unit – 4: structure and style of presentation for audio-visual reporting, i.e. television.
- Unit – 5: the recent development in reporting style.

Course Outcomes:

Sem I:

This course provides an elaborate description of the basic models and theories of Mass Communication.

After completion of a degree in Journalism & Mass communication with media management one can get job offers from media companies and organizations. With media management, one can carry out many works and job roles such as digital marketer, project manager, media planner, market analyst in the fields of media. Students pursuing this course studies concepts and processes of management, information technology, managerial economics, consumer behaviour, marketing management, strategies, and much more to gain understanding and expertise in the field.

This course provides the contents regarding reporting and editing style for print media

Sem II:

- This course will provide the growth of press in India in Pre-independence and Post- independence era along with the period of freedom movement.
- This course will present a crystal clear idea about the developmental staircase of Indian media scenario.
- This course will help to understand the further progress of Indian press by considering the previous issues, approaches and arguments.

The course will provide the basic knowledge of radio production theory, techniques and aesthetics via practical experience in the writing and production of several program formats. Students will work on specific projects designed



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to help the art of audio recording, editing, mixing, and aural storytelling techniques. Again they will get ideas of use of sound effects, music, narration, and dialog in a radio script. Finally the course curriculum will build on the learner's knowledge of radio production and broadcasting, to enable the students to greatly improve on their existing skills and prepare them fully to work in a professional broadcast environment with an emphasis on production, research, reporting and presentation.

Semester wise Programme Specific outcomes:

Sem I: Skill Enhancement Course (SEC): Print Production

This paper will provide practical knowledge to the students

- the intellectual abilities to analyze the print media.
- competently to identify, analyze and replicate the linguistic features of an article and critically evaluate current print media practices.
- with confidence the basic skills to write and subedit a variety of articles which comply with space and time restrictions, as well as to find images for news and feature articles.
- Can demonstrate specialized knowledge of recent trends and understand the editorial processes involved in producing print media.

Sem II: Skill Enhancement Course (SEC): Radio Production

- This course will help the students to understand the basic areas of media reporting.
- This course will present the structural values of different types of media reporting.
- This course will make a clear picture of the presentation style of different media reporting.
- This course will help the students to understand the recent developments and the new trends of different reporting segments.

UG programme through CBCS Syllabus:

This department is providing education towards students through six semesters. The entire duration to complete this course is 3 years. It is a under graduation course where teachers are trying to teach students by following the syllabus which is provided by the Burdwan University. We have followed Sem I and Sem II syllabus from NEP 2020 CCFUP

To complete the course the students must study:

14 Core Course (CC) papers of 6 credits

4 Generic Elective (GE) papers of 6 credits

2 Skill Enhancement Course (SEC) papers of 2 credits

4 Discipline Specific Elective (DSE) papers of 6 credits and

Ability Enhancement Compulsory Course (AECC) in Environment Studies



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Semester I is composed of:

CC1: Introduction to journalism

CC2: Introduction to media and communication

GE 1: Any discipline other than MCJ

AECC: Environment Studies

Semester II is composed of:

CC3: Reporting and editing for print

CC4: Development of media in India and Bengal

AECC: English / MIL

GE 2: Discipline other than MCJ

Semester III is composed of:

CC5: Introduction to broadcast media: Radio

CC6: Introduction to broadcast media: Television

CC7: Advertising and Public relations

SEC 1: Radio production or Development journalism

GE 3: Discipline other than MCJ

Semester IV is composed of:

CC8: Introduction to new media

CC9: Development communication

CC10: Media ethics and law

SEC 2: Documentary production or photography

GE 4: Discipline other than MCJ

Semester V is composed of:

CC11: Global media and politics

CC12: Introduction to film studies

DSE 1: Communication research and methods or print journalism and production DSE 2: Corporate social responsibility or media gender and human rights

Semester VI is composed of:



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CC13: Rural communication

Cc14: Media industry and management

DSE 3: Multimedia journalism or dissertation

DSE 4: Media & industry or community outreach programme

CC 1 to CC 14 each Honours paper is consisting of 75 marks which is parted as 60+10+5. 60 is for theory paper, 10 is for Internal assessment and 5 is for Attendance. Where the teachers can take total 60 classes to complete each paper.

In Semester I and Semester II, there is no skill enhancement course (SEC) or discipline specific elective (DSE) paper. Two SEC papers are in semester III and semester IV. Four DSE papers are in semester V and semester VI.

SEC 1 and SEC 2 each paper consisting of 50 marks which is parted as 40+10. 40 is for theory paper and 10 is for internal assessment. Where the teachers can take total 40 classes to complete each paper.

DSE 1, DSE 2, DSE 3, DSE 4 each paper is consisting of 75 marks which is parted as 60+10+5. 60 is for theory paper, 10 is for Internal assessment and 5 is for Attendance. Where the teachers can take total 60 classes to complete each paper.

Semester wise programme outcomes:

Semester I: After completion of these paper the students will be able to understand these following papers:

CC 1: Introduction to Journalism

the basic concept of news and the basic components of a news story.

The different forms of print media which opens the vast area of media reach to the students to get a taste of diversified media portfolio.

the structure and construction of news story that helps the students to get an overview about the process of organizing news stories with archives, internet and with other sources.

The comparison of different types of media and its role towards the democratic society enriches the students with contemporary issues and debates.

CC 2: Introduction to Media and Communication

The definition of communication

different forms and levels of communication like verbal, non-verbal communication, and mass communication, public communication, trans personal communication etc.,

the mediated and non-mediated communication

How media is impacting on every day's life

The mass communication and mass media

the entire communication process through models and theories



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about the earlier models like Aristotle model, Laswell model, Shanon-Weaver model, Berlo's model etc., which defined communication as a linear process where the feedback is missing

the non-linear communication process through Wilbur Schramm and Charles E Osgood's Circular model of communication

the concept of Effects, levels of Noise, frame of reference etc.,

the concept of Freedom of press, social responsibility through 'Four theories of the press' which is also known as the 'Normative theories of the Press'.

the concept of Jurgen Habermas's Public Sphere and Walter Lippmann's Public Opinion

how the media is affecting the people. Is it directly effecting or limitedly effecting the people? Few theories like hypodermic needle, individual difference, personal influence, limited effects theory will help to understand the effects of media.

The concept of Spiral of silence, reception theory, propaganda model, cultivation analysis, agenda setting theory, ritual model etc., which will help the students to think critically about the communication process.

Semester II: After completion of these papers the students will be able to understand **CC 3: Reporting and editing for print**

the concept of news reporting and writing.

The news editing like page planning, proof reading, photo editing techniques etc., The concept of beat reporting.

Organizational structure of newspaper, newsroom.

Paid news, agenda setting, what are these issues, and how pressures can be created on a newsroom has been said, the role of gatekeepers in a newsroom has been discussed.

CC 4: Development of media in India & Bengal

the concept of early days of press and its evolution (1780-1940)

some historical press law during the British era.

The recent developments in Indian press.

Semester III: After completion of these papers the students will be able to understand **CC 5: Introduction to Broadcast Media: Radio**

The concept of wireless communication and radio's characteristics as an audio medium. How the electromagnetic wave is helping in communication.

Evolution of radio in India and around the world

The Radio as a medium of mass communication as it can inform, educate, entertain, correlate, interpret, surveillance etc., like other mass media.



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The concept of HAM radio, Internet radio, Podcasting etc.,

The concept of worldwide radio stations like British Broadcasting Corporation, Voice of America with the reference of All India Radio

The radio news and news bulletin's structure

How the news will be presented and what will be qualities of the presenter? The concept of radio newsroom: inside and outside

The reporters, sub-editors, editor's work process

How live streaming is happening through OB van

The radio programme formation like how to take interview, what is panel discussion, radio talk, radio package, radio feature etc.,

The need of illustrated reading and proper storytelling for an audio medium.

How to produce a radio programme through the production process like scripting, editing, mixing etc.,

Uses of microphones and its different forms

acoustic treatment to record in the indoor studio

non-linear editing with the transition like cross fade, wrap-up, dissolve etc., and the use of sound card, sound effects

limitations of the editor and the estimated budget for the radio programme the concept of public and private FM broadcasting

scope of community radio in rural development in reference to BNNRC and Nepal's community radio.

CC 6: INTRODUCTION TO BROADCAST MEDIA: TV

different types of script writing in television program.

How to prepare news capsules

The concept of Prasar Bharati, public service broadcaster, community television, different types of shot, camera angles, camera movements etc.

CC 7: Advertising & Public Relations

the vast area of marketing strategies, different types of advertising, different mediums of ad., Branding, ad agencies and their work process, ethics regarding ad. Campaigns, how to make budgets for ad. etc.

the Public Relations which enable the students to learn about publics and PR of different sectors, PR campaigns as well as crisis management.

Social media marketing helps students to learn about the tactics and strategies of social media PR.



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Semester IV: After completion of these papers the students will be able to understand: **CC 8: Introduction to New media**

the importance of new media Technologies and digital journalism.

The concept of computer mediated communication (CMC) & convergence media. the concept of WEB SITE planning and blog writing etc.,

CC 9: Development Communication

the concept of development, Development vs growth, Development as freedom. The various Development related model like Nehruvian model, Gandhian model etc.,

the different types of paradigms (dominant paradigm, alternative paradigm, and dependency paradigm).

the various Development approaches like that diffusion of innovation, mass media as magic multiplier, sustainable development, participatory development, role of media in development, media tools in Development communication etc.,

the topic like NGO support in Development communication. Government scheme- SITE (1975), KHEDA (1990), JHABUA (1990), MNREGA (2005) etc.,

the concept of E-governance, E-chaupal, ICT for Development.

The Development support communication of India in the eras of agriculture Development, women empowerment, and others.

CC 10: Media Ethics and the Law

the difference between Ethics and Law

the basic knowledge of Indian Constitution and Indian Penal Code

the Fundamental rights, article 19 (1) and article 19 (2) is concentrated mainly. The libel and slander of defamation, sedition, inflammatory writings etc., Breaching of privacy and surveillance is legal in some cases.

About the working hour, wages etc., of working journalists.

About the rights of common people through the Right to information act of 2005 How to treat court? No one can contempt the court as per their own.

Ethical issues in social media through different sections of IT Act.

The sting operations through a case study named Operation Westend held by Samuel Mathew

The ethical guidelines like News Broadcasters Association guidelines, broadcast bill guidelines etc.,

The laws regarding pornography, indecent representation of women in advertisement, sexual harassment, or molestation in workplaces etc.,



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How to regulate the media organizations to maintain the quality of the media product Media reporting on gender gap, marginalized sections etc.,

Semester V: After completion of these papers the students will be able to understand: **CC 11: Global media & politics**

the concept of contemporary global media politics.

some media conglomerate and media typhoon.

the concept of globalization.

CC 12: Introduction to film studies

an overview of world cinema as well as Indian cinemas.

enriches the students with different forms of films, they get to know the stages of film making, different shots and languages of films.

Semester VI: After completion of these papers the students will be able to understand: **CC 13: Rural communication**

the concept of Rural vs urban society, rural vs urban cultural perspective, sociological perspective and demographical perspective, agriculture development.

model of rural communication (communication for social change) Gandhian view of rural development.

Panchayat Raj Institution System (PRIS), PRIS communication gap, communication strategy, Rural co-operative, and self-help group etc.,

The concept of rural media (Folk media), community media and rural development. **CC 14: Media industry and management**

the concept of media management, planning, structure, hierarchy.

Some management oriented important theories.

The management functions like financial management, personal management, strategic management, budgeting etc.

Programme specific outcomes:

It makes students to realize the practical fact that the knowledge and techniques learnt in this course has direct or indirect implication for the betterment of society and its sustainability.

In Semester I and Semester II, there is no programme specific outcomes papers like skill enhancement course (SEC) or discipline specific elective (DSE) paper. Two SEC papers are in semester III and semester IV. Four DSE papers are in semester V and semester VI.

Semester wise programme specific outcomes:

Semester III: After completion of this paper the students will be able to gain the practical knowledge about:

SEC 1: Radio production



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The radio broadcast formats, advertising jingles, radio magazine, feature, talk show, discussion etc.

The concept of radio production- A. pre-production B. production C. post-production.

script writing format, creative sound effects, acoustic treatment of audio studio, studio console etc.,

Semester IV: After completion of this paper the students will be able to gain the practical knowledge about:

SEC 2: Documentary production

an overview of a documentary making with its different forms and styles.

This skill enhancement course also helps the students with practical guidance of the overall production of a documentary.

Semester V: After completion of these papers the students will be able to gain the practical knowledge about:

DSE 1: Communication Research & Methodology

The concept of research and it's methodology

Communication research as the subset of research

Difference between applied and basic research

How the theoretical overview is helping to construct the new scientific research How to write literature review

Research design formulation

The concept of qualitative and quantitative method

How to do survey for quantitative study

Difference between questionnaire and schedule

The concept of open and close ended question

Difference between longitudinal and cross-sectional study

Need of pilot study

Difference between primary and secondary data

How to do qualitative research with observation method

The methodology of experimental study, case study, historical research, narrative analysis, content analysis, ethnographic study, discourse analysis etc.,

Need of focus group discussion, interview etc.,

The concept of universe and population.

Need of sampling and its representativeness



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How to minimize sampling error

The concept of Probability and non-probability sampling method

The concept of data analysis technique like coding, tabulation

How to relate and interpret the data

Ethical perspectives in research, plagiarism checking

Their individual project and how practically do the communication research by self How to write the research report from the cover page to the bibliography with foot notes

DSE 2: Corporate social responsibility (CSR)

the concept of corporate and organization, corporate governance, and management. the stakeholder, stakeholder relationship and James e. Grunigs theory (1984). The corporate crisis, crisis plan management system, corporate brand implementation. CSR and media relation, CSR budget and social audit.

Semester VI: After completion of these papers the students will be able to gain the practical knowledge about:

DSE 3: Dissertation

The project works of related issues regarding communication research in the field of journalism, public relations, development communication, advertising, mass communication etc.,

DSE 4: Community Outreach Programme

The concept of community and their work

Contemporary social issues of the community

The practical experience of the doing research in the field of development communication the concept of community outreach programme

The concept of Ethnographic studies, participatory development communication, development support communication, sustainable development etc.,

How to do practical research by following the research methodology

How to do field survey

The process of making questionnaire

How to fill the data bank and its interpretation

The audio-visual documentation process of their work

how to present the entire research report

Course outcomes:



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Course Outcomes are the statements that help the learners to understand the reason for pursuing the course and helps them to identify what they will be able to do at the end of the course.

After completion of the entire three years of bachelor's degree in mass communication and journalism a student can join in various department. This subject is a convergence of many subjects. This degree opens amazing careers. one degree and huge opportunities are there.

If any student passionate about teaching profession, then that student must go for MA in Mass Communication and Journalism and should follow the NET/SET/RET examination to get scope in the PhD or in Lectureship.

If the student does not want to do higher studies, then can go for government jobs like Banking, UPSC etc.,

After completion of graduation one can join print journalism where is a huge scope to work. In case of print journalism one can be reporter, correspondent, sub editor, freelancer, stringer, editor in chief, proof-readers, feature writer, columnist, photographer etc.,

After completion of graduation one can join as Radio Jockey, broadcast assistant, radio news presenter, anchor etc., in the public or private radio stations.

In case of television journalism there must be a cameraman and other opportunities like print and radio journalism.

One can join as public relations officer in public or private sector to handle the relations with the common people.

In case of advertising one can work in ad agency to create advertising for the clients.

After doing the course related to film studies one can work as film director, actor, producer etc.,

Photographers are important for different medium. They can be photographer for the print medium or can be the camera person for the electronic medium. They may be paparazzi or wild photographer or anything else. Photography is a vast area where students can get many opportunities.

Media person can join as media manager where they have to work as a media organisation's manager like print media manager or electronic media manager.

Through web journalism freelancers are doing well. They can make blog, YouTube content, Instagram live, promote Facebook page etc.,

Can work as an event manager. They can manage any kind of event which is related to media. Now a days content writing is an attractive job. One can do it from office or from home.

After completion of graduation student can do certificate course or diploma in many areas like diploma in public relations, media management, public administration, media studies etc.,



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Department of philosophy

Programme outcome and course outcome

Course Title: Outlines of Philosophy: Indian and Western—I (Code: PHIL1011)

Module-I: Indian Philosophy—Foundations

- Students will understand the fundamental characteristics of Indian philosophy, emphasising the Vedic and Upaniṣadic worldviews.
- They will critically analyse the metaphysical and epistemological concepts introduced in ancient Indian texts.

Module-II: Indian Philosophical Systems

- Explore Cārvāka's epistemology, materialism, and the concept of self as the body.
- Delve into Jainism's doctrines, including anekāntavāda (non-absolutism), syādvāda (conditional predication), and the theory of the self and liberation.
- Examine Buddhism's central teachings: the Four Noble Truths, dependent origination, impermanence, and no-self, along with the major schools of thought.

Module-III: Western Philosophy—Beginnings

- Comprehend the early evolution of Western philosophy through the contributions of the Ionian School, Parmenides, Heraclitus, and Zeno.
- Gain insights into Plato's theories of knowledge and ideas.



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Module-IV: Western Philosophy—Aristotelian Foundations

- Engage with Aristotle's critique of Plato, his theories of substance, causation, and the interplay of form and matter.

Semester-I: Skill Enhancement Course (SEC)

Course Title: Philosophy of Human Rights (Code: PHIL1051)

Module-I: Foundations of Human Rights

- Trace the historical development of human rights from ancient to contemporary times.

Module-II: Philosophical Traditions

- Analyse natural rights traditions and their critiques by philosophers such as Bentham and Burke.
- Explore contemporary perspectives on rights by thinkers like Joel Feinberg and Thomas Hill Green.

Module-III: Human Rights in the Indian Constitution

- Understand the constitutional framework of fundamental rights and their relationship with human rights.

SEMESTER-II: MAJOR/DS COURSE (CORE)

Course Title: Outlines of Philosophy: Indian and Western—II (Code: PHIL2011)

Module-I: Indian Philosophy—Nyāya and Vaiśeṣika

- Develop a deep understanding of Nyāya epistemology, including pratyakṣa (perception), anumāna (inference), upamāna (comparison), and śabda (testimony).
- Explore Vaiśeṣika metaphysics with a focus on saptapadārtha (seven categories) and atomic theory.

Module-II: Indian Philosophy—Sāṃkhya and Yoga

- Study Sāṃkhya's doctrines of satkāryavāda (theory of causation), prakṛti (nature), guṇas (qualities), and puruṣa (self).
- Understand Yoga's cittavṛtti, cittavṛtтинirodha, and aṣṭāṅgayoga, alongside its concept of īśvara.



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Module-III: Western Philosophy—Rationalist Foundations

- Examine Descartes' method of doubt, cogito ergo sum, classification of ideas, and substance dualism.
- Explore his interactionism and criterion of truth.

Module-IV: Rationalist Systems of Spinoza and Leibniz

- Analyse Spinoza's doctrine of substance, parallelism, and degrees of knowledge.
- Understand Leibniz's Monadology, truths of reason, truths of fact, and pre-established harmony.

Semester-II: Skill Enhancement Course (SEC)

Course Title: Environmental Ethics (Code: PHIL2051)

Module-I: Foundations of Environmental Ethics

- Understand the scope of environmental ethics and the distinction between intrinsic and instrumental values.

Module-II: Anthropocentric and Non-Anthropocentric Perspectives

- Compare anthropocentric and non-anthropocentric approaches to environmental ethics.

Module-III: Rabindranath Tagore's Philosophy of Nature

- Analyse Tagore's conceptualization of nature through his works like *Tapovan* and *Raktakarabi*.

COURSE OUTCOMES FOR SEMESTER III

Major/DS Course (Core): Outlines of Philosophy: Indian and Western—III (Code: PHIL3011)

Module-I: Empiricism in Western Philosophy



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- Understand Locke's theories on innate ideas, substance, primary and secondary qualities, and knowledge.
- Examine Berkeley's critique of Locke, including his rejection of substance and abstraction, and his assertion of *esse est percipi*.

Module-II: Rationalism and Critical Philosophy

- Analyse Hume's theories of knowledge, laws of association, causality, and personal identity, emphasizing his scepticism.
- Explore Kant's critical philosophy, including the Copernican revolution, synthetic a priori judgments, and theories of space and time.
- Delve into Hegel's dialectical method and the concept of the Absolute.

Module-III: PūrvaMīmāṃsā Philosophy

- Study the epistemological tools (*pramāṇas*) of arthāpatti (postulation) and anupalabdhi (non-perception).
- Understand the principles of prāmāṇyavāda (theories of validity).

Module-IV: Advaita and Viśiṣṭādvaita Vedānta

- Examine Advaita Vedānta concepts of *vivartavāda* (apparent transformation), *māyā*, Brahman, jīva, and *jagat*.
- Compare Viśiṣṭādvaita's critique of Advaita, and its views on īśvara, jīva, and *jagat*.

Major/DS Course (Core): Ethics: Indian and Western—I (Code: PHIL3012)

Module-I: Vedic Ethical Principles

- Gain insights into Vedic concepts like ṛta (cosmic order), satya (truth), yajña (sacrifice), ṛṇa (debt), and puruṣārtha (human goals).

Module-II: Ethics of the Bhagavadgītā

- Understand *niṣkāmakarma* (selfless action) and *sthitaprajña* (equanimity) as ethical ideals.



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Module-III: Foundations of Ethics

- Study the nature and scope of ethics, distinguishing between moral and non-moral actions.
- Explore the role of motive and intention in moral judgment.

Module-IV: Development and Postulates of Morality

- Examine the evolution of morality and its foundational principles.

Multi/Interdisciplinary Course: Value Education in Indian Tradition—III (Code: PHIL3031)

Mahatma Gandhi

- Analyse his concepts of God and Truth, *ahimsa* (non-violence), and *satyagraha* (truth force).
- Understand his philosophy of ends and means, trusteeship, Sarvodaya, and ideal state.
- Explore Gandhi's views on education and morality.

B.R. Ambedkar

- Study Ambedkar's concept of Dhamma, his critique of the caste system, and his role in the Dalit movement.

Skill Enhancement Course (SEC): Informal Fallacies (Code: PHIL3051)

Module-I: Introduction to Fallacies

- Define fallacies and classify them into formal and informal categories.

Module-II: Fallacies of Relevance

- Study fallacies such as appeal to emotion, red herring, strawman, and ad hominem.

Module-III: Fallacies of Defective Induction

- Understand arguments from ignorance, appeals to authority, false cause, and hasty generalization.

Module-IV: Fallacies of Presumption and Ambiguity

- Explore fallacies like begging the question, false dilemma, equivocation, and amphiboly.



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COURSE OUTCOMES FOR SEMESTER-IV

Semester-IV: Major/DS Course (Core)

Course Title: Ethics: Indian and Western—II (Code: PHIL4011)

Module-I: Buddhist Ethics

- Analyse the ethical principles of Buddhism, including Pañcaśīla (five moral precepts) and Brahmavihāra (four sublime states).
- Discuss their relevance in fostering personal and social harmony.

Module-II: Jaina and Yoga Ethics

- Explore Jaina ethics with a focus on Pañcavrata (five vows), distinguishing Mahāvratā (great vows) and Anuvratā (small vows), and Triratna (three jewels).
- Understand the ethical framework of Yoga through Yama (restraints) and Niyama (observances).

Module-III: Normative Theories

- Examine consequentialist theories, including Hedonism, Act Utilitarianism, and Rule Utilitarianism.
- Study deontological theories, focusing on Act Deontology, Rule Deontology, and Kant's moral philosophy.

Module-IV: Theories of Punishment and Applied Ethics

- Compare theories of punishment: Retributive, Deterrent, and Reformative, with a discussion on capital punishment.
- Address ethical issues in applied ethics, including suicide, euthanasia, and gender equality.

Course Title: Western Logic: Deductive (Code: PHIL4012)

Chapters 5 to 10 (as per M. Copi, C. Cohen, K McMahon: *Introduction to Logic*)

- Develop skills in formal deductive reasoning, including categorical and propositional logic.



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- Understand logical equivalence, validity, and proof techniques.
- Analyse complex arguments using predicate logic and explore advanced deductive methods.

Course Title: Indian Logic (Code: PHIL4013)

Topics from Tarkasaṁgraha by Annambhatta

- Understand the foundational concepts of Indian logic, beginning with the definition of buddhi (knowledge).
- Explore the pramāṇas (means of valid knowledge) up to the upamānapramāṇa (comparison).

SEMESTER-I: MINOR COURSE

Course Title: Philosophy: Indian and Western—I (Code: PHIL1021)

Module-I: Indian Philosophy—Core Concepts

- Understand the general features of Indian philosophy, focusing on Cārvāka's materialism and epistemology.

Module-II: Jainism and Buddhism

- Examine Jainism's multi-perspective approach and Buddhism's foundational doctrines, such as the Four Noble Truths and dependent origination.

Module-III: Metaphysics and Realism

- Grasp the nature of metaphysics and its critiques. Study various forms of realism, including naïve, scientific, and representative realism.

Module-IV: Substance and Mind-Body Relations

- Compare the views on substance by Descartes, Spinoza, Locke, and Berkeley.
- Explore philosophical approaches to the mind-body problem, including interactionism and parallelism.

Multi/Interdisciplinary Course



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Value Education in Indian Tradition—I: Swami Vivekananda and Sri Aurobindo (Code: PHIL1031)

Course Title: Value Education in Indian Tradition—I: Swami Vivekananda and Sri Aurobindo

Module-I: Swami Vivekananda—Practical Vedānta

- Examine Vivekananda's interpretation of Practical Vedānta, focusing on the nature of God, humanity, and the cosmos.
- Understand how his ideas integrate spirituality with human development and ethical living.

Module-II: Swami Vivekananda—Paths of Yoga

- Explore the four paths of Yoga: karma yoga (selfless action), jñāna yoga (knowledge), bhakti yoga (devotion), and rāja yoga (meditative discipline).
- Assess the relevance of these paths in personal and societal transformation.

Module-III: Sri Aurobindo—Integral Philosophy

- Study Sri Aurobindo's concept of Integral Yoga, which synthesizes spiritual practices and integrates them with life's responsibilities.
- Analyse his vision of integral education as a tool for holistic human development, focusing on physical, emotional, intellectual, and spiritual growth.
- Understand the idea of *Niṣkāmakarma* (desireless action) and its philosophical and ethical implications.

SEMESTER-II: MINOR COURSE

Course Title: Philosophy: Indian and Western—II (Code: PHIL2021)

Module-I: Indian Philosophy—Nyāya, Vaiśeṣika, Sāṃkhya, and Yoga

- Investigate Nyāya's *pramāṇas* (means of knowledge) and Vaiśeṣika's *ṣaptapadārtha*.
- Understand Sāṃkhya's *satkāryavāda* and Yoga's *aṣṭāṅgayoga*.

Module-II: Mīmāṃsā and Advaita Vedānta

- Explore Mīmāṃsā's epistemological framework and Advaita Vedānta's theories of Brahman, jīva, and jagat.

Module-III: Critical Philosophy and Theories of Causation



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- Examine Kant's critical philosophy and the regularity and entailment theories of causation.

Module-IV: Theories of Evolution

- Gain insights into philosophical perspectives on evolution and their implications.

Multi/Interdisciplinary Course

Value Education in Indian Tradition—II: Rabindranath Tagore, S. Radhakrishnan, and Md. Iqbal (Code: PHIL2031)

Course Title: Value Education in Indian Tradition—II: Rabindranath Tagore, S. Radhakrishnan, and Md. Iqbal

Module-I: Rabindranath Tagore

- Explore Tagore's views on the nature of religion and its relationship to human creativity and spirituality.
- Analyse his concept of the "surplus in man," emphasizing humanity's capacity to transcend material existence.
- Discuss his philosophical approach to addressing the problem of evil and its relevance to ethical living.

Module-II: S. Radhakrishnan

- Study Radhakrishnan's interpretation of religious experience as an intuitive apprehension of reality.
- Examine his vision of secularism as a harmonious coexistence of diverse religious and philosophical traditions.
- Understand his emphasis on the transformative role of spirituality in individual and societal development.

Module-III: Md. Iqbal

- Delve into Iqbal's philosophy of selfhood, exploring his concept of *khudi* (selfhood) and its role in personal and collective empowerment.
- Analyse Iqbal's views on the nature of the world and its dynamic relationship with God, emphasizing creativity and evolution.
- Understand his integration of philosophy, poetry, and theology to inspire spiritual and intellectual awakening.

SEMESTER-IV: MINOR COURSE



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Course Title: Contemporary Indian Philosophy (Code: PHIL4021)

Module-I: Rabindranath Tagore

- Discuss Tagore's views on the finite and infinite aspects of humanity, the nature of religion, and the concept of surplus in man.

Module-II: Swami Vivekananda

- Examine Vivekananda's Practical Vedānta and his idea of Universal Religion.

Module-III: Sri Aurobindo

- Study the nature of reality, human evolution, and Integral Yoga as proposed by Aurobindo.

Module-IV: S. Radhakrishnan

- Explore Radhakrishnan's philosophy on the nature of man and religious experience.

Module-V: Md. Iqbal

- Analyse Iqbal's views on the self, the world, and God.

Module-VI: Mahatma Gandhi and B.R. Ambedkar

- Understand Gandhi's philosophy of Truth, Ahimsa, and Sarvodaya.
- Critically assess Ambedkar's critique of the caste system and his role in the Dalit movement.

Dept. Of Physical education and Sports

Programme Outcome and Course Outcome

PO1. Present day technological developments have paved a clear way to the sports performance enhancement. Hence the History, Principles and Foundation of Physical education are introduced to the students. The history of both physical education and Olympics helps the students to know the background of the events.

PO2. The theoretical knowledge of Historical development of Physical Education and Sports.



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Po3. The theoretical knowledge of Olympic Movement, Commonwealth and Asian Games

Po4. The theoretical knowledge of Foundation & Principles of Physical Education and Sports Science.

Po5. The Practical knowledge of Physical fitness test through AAHPERD.

Po6. The theoretical and practical knowledge of fitness and Wellness.

Po7. The Practical knowledge of Exercise and Sports for Elementary Students.

Po8. The theoretical and practical knowledge of Health and Wellness Education.

Po9. The theoretical and practical knowledge of Metabolic Disorders and Lifestyle Management.

Po10. The theoretical and practical knowledge of Yoga Education and naturopathy.

Po11. The theoretical knowledge of Exercise and Sports Management.

Po12. The theoretical and practical knowledge of Fitness and Gym Exercise.

Po13. The theoretical and practical knowledge of Musical Exercise (Exercise with Traditional / Folk Indian Music etc).

.po14. The theoretical and Practical knowledge of Gymnastics.

Po15. The theoretical and practical knowledge of Self Defence

PO16. Present day technological developments have paved a clear way to the sports performance

enhancement. Hence the Foundation of Physical education is introduced to the students. The

history of both physical education and Olympics helps the students to know the background of the

events. Towards the further improvement, it is apt to say that Young Men Christian Association

(YMCA), Sports Authority of India (SAI), department of youth and sports Govt. of west Bengal.

National and International competitions and sports festivals contribute to the present-day sports

performance improvement.

PO17. Anatomy and Physiology are the sports science subjects deal with the structure and functions

of the human body. Since, the knowledge about human body is very essential to understand the

muscular and skeletal involvements of various joints, the students learn this mechanism with lot of

interest to perfect the sports movements. It is useful to learn about the internal organs like heart,

lungs and nervous system as they are the primary supporters of all body movements. This knowledge

will assure the students the ratio of physical work and recovery.

PO18. Health and safety education is another branch of science that gives knowledge about the

personal health and safety education. The students show a lot of interest to know the meaning,



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principles, components of personal and community hygiene. By understanding the communicable diseases, the students are able to lead a diseases free life. As they are involved in regular physical training, safety education plays a dominant role. They also learn to be safe at home, on the play field, inside a gym and in the public. They act as health ambassadors and carry the adage namely “Prevention is better than cure”.

PO19. All students understood that Gymnastics is the mother of all sports. Hence, they learn all gymnastic movements and will teach the same to the children at an early age. The process of transferring the knowledge will definitely help the children to improve sensory motor balance, neuromuscular coordination, muscular agility and joint mobility. They also learn to use different gymnastic apparatus along with the rules to use them efficiently.

PO20. The study of foundation of yoga helps the students to understand the historical background, need and importance. This branch of knowledge helps to know the various limbs of yoga, asanas, pranayama, kriyas and Banda.

PO21. The branch of science namely biomechanics and kinesiology deal with movements of the human body using mechanical principles. The competitive techniques of various games and sports activities demand for perfect movements. In order to enhance sports performance, it is necessary to execute the movements with accurate and appropriate body mechanics. That’s why students show a great deal of importance to learn this subject.

PO22. Methods of physical education deals with appropriate methods to present the scientific inputs effectively. Serious planning is required for teaching various sports techniques effectively. The scientific inputs will reach the students fully when the teacher uses appropriate teaching methods. All the students learn from this branch of science the system of conducting intramural and extramural competitions. This knowledge will widen the scope of the future teacher’s professional career.

PO23. The subject namely “Nutrition” gives scope to the students to understand “healthy diet”. Students also learn the importance of vitamins and minerals. This knowledge will definitely improve the health of the sports persons, family health and in turn the health of the whole society.

PO24. The branch of science namely General Theory and Methods of Sports Training (GTMT) imparts scientific knowledge about training of sports persons. The general and specific fitness is the



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outcome of sports training. The students learn various sports training methodology which could be used to develop all the fitness components and sports performance. Students also find this science to be very useful to prepare short-, medium- and long-term training plans.

PO25. Another branch of sports science is “Tests and Measurements”. Students understand the meaning and importance of this science. They use this knowledge for anthropometric, physical, physiological, psychological and game specific evaluation of sports persons.

PO26. The sport science subject namely “Psychology and Sociology” has found a very important place in sports training. Students become familiar with laws of learning, theories of learning and learning curve. Students are also aware of the relationship with others, leadership qualities and their own personality improvement.

PO27. “Applications of Computer” is of vital importance in the modern society. Surfing net gives a lot of professional inputs. Students can use them to enhance their professional competency. They can store huge volume of professional information on various issues. Students are able to get the latest information instantly.

PO28. The subject namely “Personality Development and Career Guidance” is found to be very useful for the present-day students. Students are in need of acceptable personality development and appropriate career guidance. This subject caters to the need of the present-day student’s population. They get definite inputs to improve their own personality and get quality career guidance. This helps them to settle down in life without facing serious difficulties.

PO29. The subject namely “Environmental studies” has found its way into the society recently. Students become aware of their own environment and decide to keep up the same in future. They are able to understand to protect the forest and water resources. They are also aware of various kinds of polluting agents and help the society to minimize using polluting agents. Thereby it is believed to have a pollution free environment and a healthy society.

PO30. The understanding of “First aid” along with its meaning, values and uses give the students a broad knowledge to use this technology on and off the field injury management.

PO31. The knowledge of gymnastics helps the students the process of transferring the knowledge in



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a practical way. This will definitely help the children to improve sensory motor balance, neuromuscular coordination, muscular agility and joint mobility.

PO32. Involving and conducting project sport meets by themselves will certainly update their knowledge about planning and organizational skills.

PO33. By learning this subject namely care and maintenance, all the students learn the methods to maintain the play fields, playing kits and playing equipment's.

PO34. Unified play day celebration is one of the interesting activities in our curriculum and by which students get an opportunity to guide intellectually disabled persons, to improve their understanding and communicating process so as to help the disabled students to attain individual wholesome development and improve their life skills.

PO35. Studying and understanding the science of Yoga helps the students to become familiarized with asanas, pranayama, Kriyas, mudras and bandhas. Learning and practicing yoga bring the mind and body together and to lead a whole some, healthy and disease-free life.

PO36. The special practical program in our curriculum namely Leadership camp which is conducted regularly in a natural environment away from our campus and that will develop for sure the leadership qualities by self-involvement and being friendly with the nature.

PO37. Practice teaching helps students to get firsthand information about the effective teaching methodology being used to make learning of game skill easy and effective.

PO38. Participating in National Service Scheme (NSS) or National Cadet Corps (NCC) helps the students to prepare themselves smart, to be social, to maintain green and healthy environment.

Programme Specific Outcomes

PSO1. Foundation of physical education: To understand the progressive development of physical education and Olympics Movement, Commonwealth and Asian Games.

PSO2. Theories and practical of specialization: To understand the Rules, their interpretations, basic skills and their drills of 1. Yoga asana, Pranayama, Kriya and Naturopathy.

2. Self Defence

PSO3. Anatomy and Physiology: Understanding anatomy and physiology helps to learn sports movements correctly and execute them in a perfect way.



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PSO4. Health education and safety education: To be aware of diseases and to lead a healthy life style.

PSO5. Gymnastics: Learning gymnastics will improve sensory motor balance, neuromuscular coordination, muscular agility and joint mobility.

PSO6. Foundation of Yoga: Yoga focuses on establishing harmony between mind and body, thoughts and actions, restraint and fulfilment and men and nature.

PSO7. Biomechanics and Kinesiology: To execute the sports movements with accurate and appropriate body mechanics.

PSO8. Methods of physical education: To improve the ability to use appropriate teaching methods for effective teaching and to organize sports and games competitions flawlessly.

PSO9. Nutrition: The knowledge of nutrition will definitely improve the health of the sports persons, family health and in turn the health of the whole society.

PSO10. General theory and methods of sports training: All the students learn the various sports training methodology which could be used to develop all the fitness components and sports performance.

PSO11. Test and measurements: The students use this knowledge for anthropometric, physical, physiological, psychological and game specific evaluation for both sports persons and non-sports persons.

PSO12. Psychology and Sociology: The Students are aware of a balanced mind and body development. They also develop social relationship with others, leadership qualities and their own personality improvement.

PSO13. Communicative English: Enhancement of communication skill will definitely improve the quality of interaction and understanding between the individuals.

PSO14. Test of reasoning: Test of Reasoning is included in the curriculum because of its quality to induce the students to reason out the issues correctly in various situations.

PSO15. Application of computer: Application of computer is a unique subject that helps the students to use the computer technology in their research work.

PSO16. Personality development and career guidance: This subject caters to the need of the present day students because they are in need of acceptable personality development and appropriate career



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guidance.

PSO17. Environmental studies: Students become aware of their own environment and decide to keep up the same in future. They are able to understand to protect the forest and water resources. They are also aware of various kinds of polluting agents and help the society to minimize using polluting agents.

PSO18. Project: By completing an appropriate project, the students learn making proper mapping concepts, flow charts, sequencing, reporting, creative writing and model making.

PSO19. First Aid: The understanding of “First aid” along with its meaning, values and uses give the students a broad knowledge to use this technology on and off the field injury management.

Practical:

PSO20. Gymnastics (2 Semesters): Learning gymnastics will improve sensory motor balance, neuromuscular coordination, muscular agility and joint mobility which help them to stabilize other competitive techniques of games and track and field events.

PSO21. Unified play day: This event has proved its efficacy in improving social interaction, confidence and self-esteem of special children. A normal child is motivated to team up with a special child and carry out all activities as joint enterprise. This helps to attain individual whole some development and improve their own life style modifications.

PSO22. Yoga: To become familiarized with asanas, pranayama Kriyas, mudras and Bandas.

Learning and practicing yoga bring the mind and body together and to lead a whole some disease free life.

PSO23. Leadership training camp: To develop the leadership qualities by self-involvement and friendly with the nature.

PSO24. Project sports meet: To get firsthand knowledge about planning and organizing sports meet.

PSO25. Care and Maintenance: To learn the methods to maintain the play field and playing equipment's.

PSO26. NSS / NCC: To preparing oneself smart, social and maintain green environment.

Course Outcomes

After the completion of the course, the student trainees will be able to:



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Title of the Course	SEM	Unit	Course Outcomes
Foundation and History of Physical Education and Sports Science Course Type: Major (Code: PEDS1011)	I	I, II, III, IV	I. Students may know the strong background of Physical Education, Exercise and Sports Science II. This subject may generate vibration for further development of Physical Education, Exercise and Sports Science
Introduction of Physical Education and Sports Course Type: Minor (Code: PEDS1021)	I	I, II, III, IV	I. Students may be interested for participating in Physical Education and sports II. Students may convince others for exercise and sports participation
Fitness and Wellness Course Type: Multi/Interdisciplinary (Code: PEDS1031)	I	I, II, III	I. Students may gate jobs in nursery, kindergarten, play school and elementary school II. Students may start their own play school in their area
Exercise and Sports for Elementary Students Course Type: Skill Enhancement Course (Code: PEDS1051)	I	I, II, III	I. Students may gate jobs in nursery, kindergarten, play school and elementary school II. Students may start their own play school in their area
Health and Wellness Education Course Type: Major (Code: PEDS2011)	II	I, II, III, IV	I. Mental set up would be ready for maintaining good health habits II. Students may follow wellness guidelines
Health and Life Style Management Course Type: Minor (Code: PEDS2021)	II	I, II, III, IV	I. Students may repair flaws in lifestyle and advice others II. Students may start practicing positive lifestyle skills
Yoga Vyayama Course Type: Multi/Interdisciplinary (Code: PEDS2031)	II	I, II, III	I. After practicing Yoga vyayama students may feel its flavour II. They may include it in their daily routine



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Sports Massage Course Type: Skill Enhancement Course (Code: 2051)	II	I, II, III	I. Students may join in the massage parlor, spa centre and health club II. Students may be self employed as a masseur
Exercise and Sports Management Course Type: Major (Code: PEDS3011)	III	I, II, III, IV	I. Students may enable to efficiently organise games and sports. II. Mental setup would be ready for further higher study of Sports Management.
Fitness and Gym Exercise (Practical) Course Type: Major (Code: PEDS3012)	III	I,II,III,IV	I. Students may start their individual gym center. II. Employability as assistant to Gym Instructor, Fitness & Wellness coach in corporate sector.
Musical Exercise (Practical) Course Type: Multi/Interdisciplin ary (Code: PEDS3031)	III	I,II,III	I. After participating several musical exercises students may texture its essence. II. They may include it in their regular life style.
Gymnastics (Practical) Course Type: Skill Enhancement Course (Code: PEDS3051)	III	I,II,III	I. Students will be able to perform different floor exercises of gymnastics II. .Students will be able to understand the concept of co-ordination, balance, center of gravity etc.



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Yoga Education Course Type: Major (Code: PEDS4011)	IV	I,II,III,IV, V	I. Provide them with comprehensive understanding of Yoga with reference to traditional texts like Patanjali Yoga sutras, Hatha Yoga Pradipika. II. Employability as assistant to Yoga Instructor, Fitness & Wellness coach in corporate sector and Alternative medicine professional in AYUSH.
Yoga and Naturopathy (Practical) Course Type: Major (Code: PEDS4012)	IV	I,II,III,IV, V	I. Covering physical, mental and spiritual dimensions of well-being. II. Employability as assistant to Yoga Instructor, Fitness & Wellness coach in corporate sector and Alternative medicine professional in AYUSH.
Self Defence (Practical) Course Type: Major (Code: PEDS4013)	IV	I.MARSA L Art/KARA TE II.BOXIN FG	I. To increase self-confidence, self-control and discipline. II. Equips students with essential skills such as self-defence, physical fitness, mental resilience, leadership and crisis management abilities.
Trends in Yoga and Sports Science Course Type: Minor (Code: PEDS4021)	IV	I, II, III, IV	I. Provide them with comprehensive understanding of Yoga and modern technologies used in sports and fitness. II. Students may understand the modern trends in yoga and sports science.

Department of Political Science

Programme Outcome(POs) and Course Outcome (COs)



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B.A MAJOR

Programme Outcome

After completing the programme following outcomes can be achieved

- I. Understanding Western Political Thought and Indian Political Thought
- II. Understanding of Political theories such as Justice, Equality and Liberty etc.
- III. Understanding of Indian Administrative System and Politics
- IV. Understanding comparative governmental system
- V. Basic ideas of different Public Administrative Thinkers and their Theories
- VI. Understanding of Local Government System in India
- VII. Basic understanding of Global Politics and relations among states
- VIII. Understanding of International Organizations such as United Nations, OPEC and SAARC
- IX. To become aware about social evils such as dowry, violence against women and consumer rights
- X. Understanding basics of Social Science Research
- XI. Basic understanding of India's Foreign Policy

CCFUP

Semester 1

MAJOR: POLS1011: Western Political Thought

After completing this paper students will be able to understand

- Aristotle's ideas on state and Plato's ideas of Justice
- Hobbes and Locke's ideas on sovereignty
- Dialectical and Historical materialism of Marx
- J.S.Mill's concept of Liberty

MINOR: POLS1021: Political Theory

After completing this paper students will be able to understand

- Different approaches to political theory viz. traditional, behavioural, post behavioural and Marxist
- The concept of sovereignty
- Rights, Liberty and Equality
- Liberalism and Neo- liberalism
- Idealist and liberal views of state

MDS/IDS: POLS1031: Introducing Political Science



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After completing this paper students will be able to understand

- Different approaches to political theory viz. traditional, behavioural, post behavioural and Marxist
- The concept of sovereignty
- Origin of the State
- Rights, Liberty and Equality
- Idealist and liberal views of state

SEC: POLS1051: Human Rights Education

After completing this paper students will be able to understand

- Brief history of human rights
- Indian constitution and protection of human rights
- National human rights commission
- Human rights movements in India; evolution, nature, challenges and prospects

Semester 2

MAJOR: POLS2011: Political Theory

After completing this paper students will be able to understand

- Different approaches to political theory viz. traditional, behavioural, post behavioural and Marxist
- The concept of sovereignty
- Rights, Liberty and Equality
- Liberalism and Neo- liberalism
- Idealist and liberal views of state
- Rawls ideas of Justice

MINOR: POLS2021: Indian Government and Politics

After completing this paper students will be able to familiar with

- Fundamental Rights and Duties
- Centre-states relations
- The working of the Union Legislature
- Powers and functions of the Prime Minister and Chief Ministers
- Supreme Court and High Court
- Electoral Process and party System

MDS/IDS: POLS2031: Introducing Indian Constitution

After completing this paper students will be able to familiar with



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- Fundamental Rights and Duties
- Centre-states relations
- The working of the Union Legislature
- Powers and functions of the Prime Minister and Chief Ministers
- Supreme Court and High Court
- Electoral Process and party System

SEC: POLS2051: Legislative Support

After completing this paper students will be able to understand

- Powers and functions of peoples representatives at different tiers of governance- MPs and MLAs
- Law making procedures and role of committees
- Budget and the role of parliament in reviewing the Union budget
- Examination of demands for grants of ministries
- working of ministries
- NITI Ayog

Semester 3

MAJOR: POLS3011: Comparative Government and Politics

After completing this paper students will be able to grasp

- Rule of law in UK and Bill of Rights in USA
- Unitary system (UK and France) and Federal system of USA
- Parliamentary (UK) and Presidential system (USA and China)
- Judiciary in UK, USA and France
- Legislatures in UK and USA

MAJOR: POLS3012: Indian Government and Politics

After completing this paper students will be able to familiar with

- Fundamental Rights and Duties
- Centre-states relations
- The working of the Union Legislature
- Powers and functions of the Prime Minister and Chief Ministers
- Supreme Court and High Court
- Electoral Process and party System



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MDS/IDS: POLS3031: Contemporary Issues in India

After completing this paper students will be able to understand

- Caste system in India
- Discrimination and violence against women
- Civil Society and Politics in India
- Religion and Politics in India
- Environmental Politics in India

SEC: POLS3051: Electoral Practices and Procedures

After completing this paper students will be able to understand

- Method of conducting General (Parliamentary) elections and elections to state assemblies
- Composition, structure and functions of the election commission in India
- Chief election commissioner
- State election commission
- Electoral reforms in India

Semester 4

MAJOR: POLS4011: Introducing Political Sociology

After completing this paper students will be able to understand

- Basic concepts of political sociology and sociology of politics
- Political participation
- Power and types of authority
- Feminism and its significance
- Religion and politics
- State and civil society

MAJOR: POLS4012: Introducing Public Administration

After completing this paper students will be able to decode

- Public Administration as a specialized discipline of Political Science
- Scientific Management Theory (Taylor) and Human Relations Theory (Mayo)
- Motivation theory (Maslow and Herzberg)
- Decision making theory (H.Simon)



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- Concepts of administration viz. Hierarchy, Span of Control, Unity of Command, Line and Staff, Centralization-Decentralization, Devolution

MAJOR: POLS4013: Introducing International Relations

After completing this paper students will be able to understand

- Basic concepts, theories ideologies and approaches to the study of International Relations
- Concepts and elements of National Power
- Global Politics
- Foreign policy and diplomacy
- Indian foreign policy

MINOR: POLS4021: Administering India

After completing this paper students will be able to understand

- Federalism
- UPSC
- Cabinet Secretariat and Central Secretariat
- Chief Secretary and Divisional Commissioner
- District administration and the role of DM, SP and SDO
- Administrative reforms in India- RTI, Lokpal and Lokayukta

COURSE OUTCOME OF B.A HONOURS IN POLITICAL SCIENCE UNDER SEMESTER WITH CBCS

Semester-I

CC-1: WESTERN POLITICAL THOUGHT

After completing this paper students will be able to comprehend

- Aristotle's ideas on state and Plato's ideas of Justice
- Hobbes and Locke's ideas on sovereignty
- Dialectical and Historical materialism of Marx
- J.S.Mill's concept of Liberty
- Lenin's imperialism



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CC-2: POLITICAL THEORY

After completing this paper students will be able to understand

- Different approaches to political theory viz. traditional, behavioural, post behavioural and Marxist
- The concept of sovereignty
- Rawl's theory of justice
- Ideological difference between Anarchism, Liberalism and Neo- liberalism
- Idealist and liberal views of state

Semester-II

CC-3: INDIAN POLITICAL THOUGHT

After completing this paper students will be able to assimilate

- Kautilya's Arthshastra
- Ram Mohan Roy as Modernizer
- M.K.Gandhi's Satyagraha
- Tagore's ideas on State, Society and Nation
- B.R.Ambedkar's Social Justice

CC-4: INDIAN GOVERNMENT AND POLITICS

After completing this paper students will be able to familiar with

- Fundamental Rights and Duties
- Centre-states relations
- The working of the Union Legislature
- Powers and functions of the Prime Minister and Chief Ministers
- Supreme Court and High Court
- Electoral Process and party System

SEMESTER-III

CC-5: COMPARATIVE POLITICS



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After completing this paper students will be able to grasp

- Rule of law in UK and Bill of Rights in USA
- Unitary system (UK and France) and Federal system of USA
- Parliamentary (UK) and Presidential system (USA and China)
- Judiciary in UK, USA and France
- Legislatures in UK and USA

CC-6: PUBLIC ADMINISTRATION

After completing this paper students will be able to decode

- Public Administration as a specialized discipline of Political Science
- Scientific Management Theory (Taylor) and Human Relations Theory (Mayo)
- Motivation theory (Maslow and Herzberg)
- Decision making theory (H.Simon)
- Concepts of administration viz. Hierarchy, Span of Control, Unity of Command, Line and Staff, Centralization-Decentralization, Devolution

CC-7: LOCAL GOVERNMENT IN INDIA

After completing this paper students will be able to understand

- 73rd constitutional amendment and rural local self-government
- 74th constitutional amendment and urban local self- government
- Panchayati raj institution and the role of BDO
- District administration and the role of DM, SP and SDO
- Administrative reforms in India- RTI, Lokpal and Lokayukta

SEC-1: LEGISLATIVE SUPPORT

After completing this paper students will be able to understand

- Powers and functions of peoples representatives at different tiers of governance- MPs and MLAs
- Law making procedures and role of committees
- Budget and the role of parliament in reviewing the Union budget
- Examination of demands for grants of ministries
- working of ministries

OR

SEC-1: PEACE AND CONFLICT RESOLUTION



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After completing this paper students will be able to understand

- International peace and conflict resolution
- Theories of international conflict resolution
- Cross border relationship
- Refugee and forced migration
- Grass root level perspective on war and peace

SEMESTER-IV

CC-8: INTERNATIONAL RELATIONS

After completing this paper students will be able to understand

- Basic concepts, theories ideologies and approaches to the study of International Relations
- Concepts and elements of National Power
- Global Politics
- Foreign policy and diplomacy
- Indian foreign policy

CC-9: SOCIOLOGY AND POLITICS

After completing this paper students will be able to understand

- Basic concepts of political sociology and sociology of politics
- Political participation
- Power and types of authority
- Feminism and its significance
- Religion and politics
- State and civil society

CC-10: INTERNATIONAL ORGANIGATIONS

After completing this paper students will be able to understand

- United nations and its security council
- International court of justice
- Peacekeeping and peace building role of United Nations
- APEC and OPEC
- SAARC

SEC-2: PUBLIC OPINION AND SURVEY RESEARCH

After completing this paper students will be able to understand

- Characteristics of public opinion
- Types of sampling to measure the public opinion



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- Structured and unstructured methods of interviewing
- Questionnaire
- Possibilities and pitfalls in predicting polling research

OR

SEC-2: DEMOCRATIC AWARENESS THROUGH LEGAL LITERACY

After completing this paper students will be able to understand

- Fundamental rights and duties
- Social evils such as dowry, sexual harassment and violence against women
- Consumer rights
- Juvenile courts, Mahila courts and tribunals
- Criminal and civil writ jurisdiction

SEMESTER-V

CC-11: SOCIAL MOVEMENTS IN INDIA

After completing this paper students will be able to understand

- Basic concepts of social movements
- Trade union movements and their strength and weaknesses
- Peasant movements in India
- Women's movements in India
- Environmental movements in India- chipko, Narmada bachaoandolan

CC-12: ELEMENTARY RESEARCH METHODS IN POLITICAL SCIENCE

After completing this paper students will be able to understand

- Basics of social science research
- Positivism and post positivism
- Quantitative and qualitative research
- Hypothesis formulation, data collection and testing of hypothesis
- Different methods of data collection

DSE-1: SELECT COMPARATIVE POLITICAL THOUGHT

After completing this paper students will be able to understand

- Salient features of Indian and Western political thought
- Kautilya on state
- Ambedkar on social justice
- Nehru on democracy
- Locke on rights



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- Rousseau on inequality
- J.S.Mill on liberty and democracy

OR

DSE-1: ADVANCED POLITICAL THEORY

After completing this paper students will be able to understand

- Contemporary trends in political theory
- Libertarianism and post modernism
- Nozick's views on entitlement theory and minimal state
- AmartyaSen's concept of justice
- Post- colonialism and orientalism

DSE-2: DEMOCRACY AND DECENTRALIZED GOVERNANCE

After completing this paper students will be able to understand

- Evolution of state system and the concept of sovereignty
- Bretton woods institutions (WORLD BANK, IMF) and WTO
- Role of MNCs
- Sustainable development goals
- Civil society and role of NGOs

OR

DSE-2: UNERSTANDING GOOD GOVERNANCE

After completing this paper students will be able to understand

- Basic concepts of good governance
- Democratic governance
- E-governance
- Corporate governance
- Global governance

SEMESTER-VI

CC-13: INDIAN FOREIGN POLICY

After completing this paper students will be able to understand

- Key determinants of India's foreign policy viz. parliament, cabinet and the PMO
- Foreign policy with neighbours
- India's relation with major powers
- Recent trends in India's foreign policy



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CC-14: CONTEMPORARY ISSUES IN INDIA

After completing this paper students will be able to understand

- Caste system in India
- Discrimination and violence against women
- Political economy of poverty and inequality
- Rights of persons with disabilities (PWDs) in India
- Disaster risk reduction and development planning

DSE-3: PUBLIC POLICY- CONCEPT AND IMPLICATIONS IN INDIA

After completing this paper students will be able to understand

- Policy making and policy implementation in India
- Economic, Social constraints of public policy
- Public health policy and NRHM
- Public education policy and the sarbshikshyaabhiyan
- Socio- cultural constraints of public policy

OR

DSE-3: LOCAL GOVERNMENT IN WEST BENGAL

After completing this paper students will be able to understand

- Evolution of rural and urban local government in west Bengal
- Structure and functions of panchayati raj institutions
- Empowerment of women, SCs and STs in the local government
- State- local government relations (financial)
- West Bengal panchayat act, 1973

DSE-4: UNDERSTANDING GLOBALIZATION

After completing this paper students will be able to understand

- Debates on globalization
- Impact of globalization on Indian economy
- Globalization and terrorism
- Globalization and new international order
- Globalization and localization



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OR

DSE4: POLITICAL ECONOMY OF INTERNATIONAL RELATIONS

After completing this paper students will be able to understand

- Basics of political economy
- Global trade regime- The World Bank, IMF and the GATT
- Functioning of the WTO
- WTO and the developing countries
- Trends in global trade and finance



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Department Botany

Programme outcomes (POs), Course outcomes (COs)

Programme outcomes:

The under-graduate programme of Botany enhances students' skills in the following aspects: Understood the basic concepts of plant kingdom and interactions with the fauna and environments and their significance in our everyday life. Acquired knowledge about different instruments and their uses. This knowledge helps in skill development of students in practical fields. Developed skills from different practical experiments to analyse scientific data critically and systematically. Acquired the skills of planning, habit of working in groups, field survey, deliver own view after analysing various scientific phenomenon and other skills which strengthen their future. Understood the significance of plantation, found way out for utilization of renewable natural resources in daily life to construct sustainable development. Besides regular curriculum, department allows some of the extracurricular programmes such as, singing, dancing, making wall magazine, science exhibition etc. This programme has been inducing our students to secure their jobs as teachers-both in schools and higher education institutes, administrators in government jobs as well as in private companies, personnels in industries, naturalists and in many other positions.

Programme specific outcome

1. Students develop a holistic knowledge in the undergraduate course starting from archegoniate group, Taxonomy of Angiosperm, Morphology, Palynology, Palaeobotany, Anatomy, Phytogeography, to advanced fields of plant science such as Cell and Molecular Biology, Inheritance biology, Plant metabolism, Microbiology, Plant physiology etc.
2. In practical classes students work out the specimens which help them to understand and to identify the specimens.
3. In practical classes students can use simple and compound microscope, centrifugation, laminar air flow, autoclave, electronic balance, several apparatus regarding biochemistry and plant physiology practical.
4. Students have a vast knowledge about preparation of thin section of plant materials in slides, different types of staining procedure, squashing and smearing technique, preparation of practical records, field note books, herbarium sheets of plant specimens, projects assignments etc., which can boost them in their professional carrier in future as technical point of skills.



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5. Students have a concrete knowledge regarding computer's software, mean, median, mode, standard deviation, standard error, chi-square test etc. which can build up and strengthen their analytical mind in future.
6. The local and long field excursions help the students to develop knowledge about the local flora and flora of specific phytogeographic region in their natural habitat.
7. Students build up awareness and knowledge in environmental related issues such as waste management, biodiversity conservation, pollution monitoring, etc.
8. Students after passing under graduate course can explore in various field of research viz. Conservation of Ecosystem, Environmental Disaster Management, herbal drugs and medicinal plants, Host pathogen interaction, crop protection and plant disease management, GIS and remote sensing, Intellectual Property Rights, Quarantine etc.
9. Students of UG course get the chance to have an exposure in skill enhancement courses such as Agricultural Botany, Biofertilizers, Medicinal Botany and discipline specific elective courses such as Reproductive biology of Angiosperms, Bioinformatics, Natural Resource Management, Plant Evolution and Biodiversity, Industrial and environmental Microbiology, Medicinal and Ethno Botany etc. This will open up new avenues and job opportunities for the Honours and General students
10. The contents of core course and optional courses in UG curriculum are beneficial for the students to get prepared for Post-Graduation admission, NET/SET/GATE and teaching in Schools other competitive examinations.

Course outcomes:

- The subject “Botany” has two distinct prospective –Classical and Applied. Thus the Botany course has been designed in theoretical and practical parts.
- The undergraduate Microbiology syllabus has been designed under choice based credit system (CBCS) since 2017-2018.
- The B.Sc. Botany honours syllabus has been divided in six semester programme containing total fourteen (14) Core Course i.e., CC1 to CC14, two Skill Enhancement Courses i.e., SEC 1 & SEC 2 in 3rd and 4th semester and four Discipline Specific Elective Course i.e., DSE 1, DSE 2 in 5th semester and DSE 3, DSE 4 in 6th semester.
- In this year (2023-24) CCFUP system has been implemented under NEP-2020 regulation, where 3 years graduation or 4 years graduation with Honours degree scheme has been incorporated. Major, Minor, SEC and ID / MD paper under the Department of Botany has been taught. In the academic year 2023-24 only Semester I and II has been completed.

Paper wise details course outcome B.Sc. Honours in Botany

CCFUP : NEP-2020 system:: SEM I & II

CBCS : SEM II, IV, V & VI



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Semester- I (CCFUP: NEP-2020)		
Paper Code	Paper Name	Outcome
BOTN101 1 Major / DSE Course (Core)	Major: Plant Diversity and Evolution	<p>Develop understanding about the classification and diversity of different microbes including Bacteria, Viruses, Fungi, etc. and other diverse plant groups like, Algae, Fungi & Lichens, Bryophytes, Pteridophytes, Gymnosperms and Angiosperms.</p> <p>Gain knowledge about developing commercial enterprises of microbial products. Understand the structure and reproduction of certain selected bacteria, algae, fungi and lichens</p> <p>Develop critical understanding, anatomy and reproduction of Microbes, Algae, fungi, Bryophytes, Pteridophytes, Gymnosperms and Angiosperms.</p> <p>Understand the instruments, techniques, laboratory.</p> <p>Develop skills for identifying microbes and using them for Industrial, Agriculture and Environmental purposes.</p>
Skill Enhancement Course (SEC) BOTN105 1	SEC: Biofertilizer	Students may develop skill about microbes as biofertilizers, isolation and mass multiplication of microbes, mycorrhizal association. They develop skill about organic farming.
Semester- II (CCFUP: NEP-2020)		
Paper Code	Paper Name	Outcome
BOTN201 1 Major / DSE Course (Core)	Major: Biomolecules and Cell Biology	<p>Develop understanding on the basic chemistry of biomolecules, their involvement in cellular life processes.</p> <p>Develop knowledge on plant cell architecture, their functioning in transducing life processes.</p> <p>Develop practical knowledge on biomolecule identification and basic cellular processes.</p>
Skill	SEC: Organic Cultivation and	Students may develop skill about organic



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Enhancement Course (SEC) BOTN205 1	Protected Agriculture	cultivation and biofertilizers and how to develop agriculture in protected way.
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Semester- III (CBCS)

Paper Code	Paper Name	Outcome
CC 5	Plant Ecology and Phytogeography	<ol style="list-style-type: none">1. Students get knowledge about various ecological components and their importance such as soil, water, land, light, wind, temperature, fire etc.2. They have grown concept about ecosystem, population, energy flow, productivity, plant communities, phytogeography.3. In practical students can habituated with various instruments i.e., Soil thermometer, maximum and minimum thermometer, anemometer, psychrometer/hygrometer, rain gauge and lux meter
CC 6	Plant Systematics	<ol style="list-style-type: none">1. Student get clear concept about basic components of taxonomy with systematics.2. They know modern terminologies of taxonomy, Taxonomic hierarchy, Botanical nomenclature, Systems of classification, Biometrics, numerical taxonomy and cladistics.3. students go for a long excursion in a place of higher altitude to observe and identify these groups of plants in their natural habitat
CC 7	Economic Botany	<ol style="list-style-type: none">1. students know about the economic importance of cereals, legumes, sugar, spices, beverages, oil, natural rubber, timber yielding plants, fiber producing plants and their origins.2. In practical, students have developed the idea of project work.
SEC-1	Agricultural Botany	<ol style="list-style-type: none">1. Students can grow their skills in organic farming technology.2. They may get knowledge about some phenomena of physiology of plants.3. They may develop skill about plant breeding, plant biotechnology through tissue culture.

Semester- IV (CBCS)

Paper Code	Paper Name	Outcome
CC 8	Palaeobotany & Palynology	<ol style="list-style-type: none">1. Students come to know fossils and fossilization process, stratigraphy, geologic time scale, microsporogenesis, pollination and ovule types



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		2. In practical they can recognize various types of fossils and they get knowledge about various types of pollen structure in compound microscopes.
CC 9	Biomolecules and Cell Biology	1. Students come to know about origin and evolution of cells. 2. They know the details ultra structure of nucleus and various cell organelles and their functions. 3. In practical they get details knowledge about mitosis and meiosis cell division from plant specimens and chromosomal morphology.
CC 10	Molecular Biology	1. Students get knowledge about DNA replication, transcription, translation, gene regulation and recombinant DNA technology. 2. In Practical classes students carry out a number of experiments on Plant Molecular Biology.
SEC-2	Biofertilizers	1. Students may develop skill about microbes as biofertilizers, isolation and mass multiplication of microbes, mycorrhizal association. 2. They develop skill about organic farming.

Semester- V (CBCS)

Paper Code	Paper Name	Outcome
CC 11	Plant Physiology	1. Students may well aware about plant-water relation, mineral nutrition, nutrient uptake, translocation in phloem, plant hormones, flowering physiology and circadian cycle of plants. 2. They get details concept of plant physiology through various physiological experiments.
CC 12	Plant Metabolism	1. Students come to know about metabolism, carbon assimilation and oxidation, carbohydrate, lipid and nitrogen metabolism. 2. They get knowledge about signal transduction of plants. 3. In practical they get details experimental knowledge about various aspects of photosynthesis, respiration and germination.
DSE-1	Reproductive Biology of Angiosperms	1. Student get details theoretical and practical knowledge about anther and pollen biology, pollination, fertilization, ovule, embryo, endosperm, seed, polyembryony, apomixis etc.
DSE-2	Bioinformatics	1. Students can introduce a new concept of Bioinformatics and its modern uses in research. 2. They get theoretical knowledge about database, biological sequence, sequence alignment, molecular phylogeny.



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		3. In practical they are accustoming with computer software with internet browsing.
	Natural Resource Management	1. Students know the essentiality of natural resources and their proper managements for sustainable developments. 2. They know about land, water, biodiversity, forests, energy flow, ecological footprints and different national and international organization of natural resources management and conservation agencies.
Semester- VI (CBCS)		
Paper Code	Paper Name	Outcome
CC 13	Genetics & Plant Breeding	1. Student must aware about mendelian genetics, extra chromosomal inheritance, linkage, crossing over, chromosome mapping, gene and chromosomal mutations, population genetics. 2. They get knowledge about methods of crop improvements via plant breeding. 3. In practical class they can study chi-square test, chromosome structure and behaviour, pedigree analysis, epistatic problems through seed samples.
CC 14	Plant Biotechnology	1. Students get knowledge about plant tissue culture, recombinant DNA technology, gene cloning, gene transfer method. 2. They should know about the application of plant biotechnology. 3. In practical they can accustoms with tissue culture medium, various technique of plant tissue culture with different equipments.
DSE-3	Plant Evolution and Biodiversity	1. Students get knowledge about early forms of plants life, evolutionary trends, phylogeny, evolutionary theories and plant diversity. 2. In practical they must know morphological and anatomical structure of plants with their adaptive features. 3. Know about the habit and habitat of diversified plants genera through field visit.
DSE-4	Industrial and Environmental Microbiology	1. Students get details skill about industrial microbiology and its application in modern world. 2. They get knowledge about bioreactors and fermentation process, importance of microbial enzymes in industry. 3. They know the different types of microbes in environment and their agricultural importance.



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		4. In practical, industry visit may enhanced their interest manyfold about practical application of microbes.
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Paper wise details course outcome B.Sc. General in Botany

CCFUP : NEP-2020 system:: SEM I & II

CBCS : SEM II, IV, V & VI

Semester- I (CCFUP: NEP-2020)		
Paper Code	Paper Name	Outcome
Minor Course BOTN1021	Minor: Plant Diversity and Evolution	Develop understanding about the classification and diversity of different microbes including Bacteria, Viruses, Fungi, etc. and other diverse plant groups like, Algae, Fungi & Lichens, Bryophytes, Pteridophytes, Gymnosperms and Angiosperms.
Multi/Inter disciplinary BOTN1031	Biodiversity and Its Conservation	Student may develop the Idea about Biodiversity, gain some basic ecological knowledge and may acquire some knowledge about the importance of conservation and their types.
Semester- II (CCFUP: NEP-2020)		
Paper Code	Paper Name	Outcome
Minor Course BOTN2021	Minor: Biomolecules and Cell Biology	Develop understanding on the basic chemistry of biomolecules, their involvement in cellular life processes. Develop knowledge on plant cell architecture, their functioning in transducing life processes.
Multi/Inter disciplinary BOTN2031	Medicinal Plants and Phytochemistry	Student may develop the idea about medicinal plants and their example



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		and understand the phytochemistry behind the important active principle of any medicinal plant.
Semester- III (CBCS)		
Paper Code	Paper Name	Outcome
CC- 1C	Plant Anatomy and Embryology	<ol style="list-style-type: none">1. In anatomy students get knowledge about various types of plant tissues and their arrangements in plants body with their functions.2. In practical they are accustoming with microscope handling.3. Gain a clear concept about plant embryo development in theoretical as well as practical.
SEC-1	Biofertilizers	<ol style="list-style-type: none">1. Students may develop skill about microbes as biofertilizers, isolation and mass multiplication of microbes, mycorrhizal association.2. They develop skill about organic farming.
Semester- IV (CBCS)		
Paper Code	Paper Name	Outcome
CC- 1D	Plant Physiology and Metabolism	<ol style="list-style-type: none">1. Students may well aware about plant-water relation, mineral nutrition, nutrient uptake, translocation in phloem, plant hormones, flowering physiology and circadian cycle of plants.2. They get details concept of plant physiology through various physiological experiments.3. Students come to know about metabolism, carbon assimilation and oxidation, carbohydrate, lipid and nitrogen metabolism.4. In practical they get details experimental knowledge about various aspects of photosynthesis, respiration and germination.
SEC-2	Medicinal Botany	<ol style="list-style-type: none">1. Students have a clear concept of history, scope and importance of medicinal plants, Indigenous medicinal sciences and Scope- Ayurveda, Basis of Siddha system



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		<ol style="list-style-type: none">2. Conservation of endangered and endemic medicinal plants3. Concepts of Ethnobotany and Folk medicines
Semester- V (CBCS)		
Paper Code	Paper Name	Outcome
DSE – 1A	Economic Botany and Biotechnology	<ol style="list-style-type: none">1. students know about the economic importance of cereals, legumes, sugar, spices, braverages, oil, natural rubber, timber yielding plants, fiber producing plants and their origins.2. In practical, students have developed the idea of project work.3. They may develop skill about plant breeding, plant biotechnology through tissue culture.4. Students get knowledge about plant tissue culture, recombinant DNA technology, gene cloning, gene transfer method.5. They should know about the application of plant biotechnology.6. In practical they can accustoms with tissue culture medium, various technique of plant tissue culture with different equipments.
SEC-3	Plant Diversity and Human Welfare	<ol style="list-style-type: none">1. Students get concept about plant diversity and conservation2. Role of plants in relation to Human Welfare
Semester- VI (CBCS)		
Paper Code	Paper Name	Outcome
DSE – 1B	Cell and Molecular Biology	<ol style="list-style-type: none">1. Students come to know about origin and evolution of cells.2. They know the details ultra structure of nucleus and various cell organelles and their functions.3. In practical they get details knowledge about mitosis and meiosis cell division from plant specimens and chromosomal morphology.



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		4. Student must aware about mendelian genetics, extra chromosomal inheritance, linkage, crossing over, chromosome mapping, gene and chromosomal mutations, population genetics.
	Dissertation	1. They have an idea about research work 2. Students get skills about research projects writing 3. They have developed the skills of seminar presentation through PPT.
SEC-4	Ethnobotany	1. Students have developed about methodology of Ethnobotanical studies 2. They gain knowledge about the role of ethnobotany in modern medicine.

Department of Chemistry Programme outcomes (POs) and Course outcome(COs)

For Chemistry Honours Students Course	Course objective	Expected outcome
CORE-COURSE (MAJOR) CHEM1011 SEM-1 Basic Chemistry-I Credits 3 + 1	Several fundamental aspects of inorganic, organic and physical chemistry is discussed for the basic understanding of the students. The topics covered will help the students for studying higher in chemical sciences. Easy organic chemistry practical using several chemical and physical methods will enhance the basic knowledge of students'	Students will be introduced with several basic aspects of theory and practical of chemical sciences. This will grow the foundation of the subject for studying various advanced topics in future semesters.



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	hands-on training	
SKILL ENHANCEMENT COURSE CHEM1051 SEM-1 Drugs and pharmaceuticals Credit 3	Design and development of several organic drugs The very detail discussion for growing of very clear idea about the drugs, their synthesis and physiological action	The clear idea about the drugs may not only grow the general sense about the synthesis and mode of action of the drugs but also help them to have employment in pharmaceutical industry.
CORE COURSE (MAJOR) CHEM2011 SEM-2 Basic Chemistry-II Credit 3 + 1	Several basic topics from inorganic, organic and physical chemistry have been chosen for the development of the general chemistry knowledge of the students. This will help to grow the foundation for studying the several aspects of applied chemistry in future.	The topics will grow the foundation of the students for the subject chemistry for learning any further advanced topics.
SKILL ENHANCEMENT COURSE CHEM2051 SEM-2 Basic Analytical Chemistry Credit 3	Development of skill for analyzing several natural and synthetic samples to find out their purity, composition, etc Development of skill for advanced separation techniques for natural and synthetic samples.	This course will develop the analysis as well as separation skills of the students which may help them to motivate for joining research and/or have employment.
CORE COURSE (MAJOR) CHEM3011 (3 and 4 years) SEM-3 Inorganic Chemistry (Theory) Credit: 5	Discussion of bonding theories (advanced parts). Application of the basic theories discussed so far towards coordination chemistry and s- and p-block elements	After studying several basic aspects of chemistry, students will go through their applications in studying coordination chemistry, s- and p-block elements. On studying different comparative properties s- and p-block elements, proper chemical logic will start to be developed among the students.
CORE COURSE (MAJOR) CHEM3012 (3 and 4 Years) SEM-3 Inorganic Chemistry (Practical) Credit: 5	Development of chemical knowledge through several hands-on qualitative experiments. Learning to synthesize several coordination compounds	Towards qualitative detection of several radicals, different experiments have to be covered. These will actually grow a clear knowledge and conception in chemistry. Moreover, preparation of



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		modern coordination compounds will create an insight to the synthetic coordination chemistry.
SKILL ENHANCEMENT COURSE CHEM3051 SEM-3 IT skills in Chemistry Credit: 3	Development of mathematical knowledge and knowledge for computer programming. Development of knowledge for different data handling softwares.	The course will help the students sound for doing several chemical computations.
CORE COURSE (MAJOR) CHEM4011 (3 and 4 Years) SEM-4 Organic Chemistry (Theory) Credit: 5	Development of knowledge for several basic and advanced topics of organic chemistry.	The course will help the students to develop a complete knowledge on stereochemistry, reaction mechanism and others of organic chemistry.
CORE COURSE (MAJOR) CHEM4012 (3 and 4 Years) SEM-4 Physical Chemistry (Theory) Credit: 5	Development of knowledge of theories of several experimental and theoretical aspects of chemistry	The course will help to develop physical chemistry knowledge of solid, liquid and gaseous states of matter. Students will also learn to do quantum chemical calculations for various systems.
CORE COURSE (MAJOR) CHEM4013 (3 and 4 Years) SEM-4 Organic Chemistry (Practical) Credit: 5	Detection of several elements in organic molecules. Detection of functional group in organic molecules. Organic preparations	Students will have a hands-on training for detection of elements (N, S, Cl, Br, etc) and synthesis/derivatization of several organic compounds.

Course Specific Outcome of 3-year/4-year Minor Students under CCFUP as per NEP-2020:

Department of Chemistry:

For Chemistry Minor Students Course	Course objective	Expected outcome



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Chemistry MINOR CHEM1021 SEM-1 General Chemistry-I Credit 3 + 1	Several fundamental aspects of the subject are discussed so that the principles can be useful for studying other branches of science (physical and/or biological sciences). Practical experiments are designed in such a way that the students of other disciplines can have an experience of hands-on training in chemistry at the primary level	On studying the course, the students will have an idea of chemical sciences, which may be applied for in-depth study of other science streams.
MULTIDISCIPLINARY CHEM1031 SEM-1 Chemistry for Household Importance Credit 3	Several topics related to everyday life have been included to grow interest among students for the subject.	After studying the topics these may help the students to get employment.
Chemistry MINOR CHEM2021 SEM-2 General Chemistry-II Credit 3 + 1	Several basic aspects from inorganic, organic and physical chemistry have been discussed. Generation of idea for studying physical and biological sciences in future	The idea created from this course may help to understand students for further studying physical, biological and material sciences.
MULTIDISCIPLINARY CHEM2031 SEM-2 Chemistry of Dyes, Pigments, Cosmetics and Perfumes Credit 3	Introduction of idea of every day products of chemical industries.	Development of idea of several molecules and materials related to dye and cosmetics industry.
MULTIDISCIPLINARY CHEM3031 SEM-3 Chemistry of Soil, Fertilizer and detergent Credit: 3	Development of knowledge of soil. Development of knowledge of fertilizer. Idea of pesticide, etc. Idea of development of several surface-active agents like soap, etc	Exploring the knowledge of fundamental chemistry towards soil, fertilizer, detergent will not only create general chemical knowledge of the students but also will generate the possibility of employability.



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ChemistryMINOR CHEM4021 SEM-4 General Chemistry-II Credit: 3 + 1	Discussion on several general aspects of inorganic, organic and physical chemistry	This course will help the students to develop advanced topics of chemistry, physics and biology. Students will learn to synthesize several coordination compounds. Students will also learn to estimate hardness of water by chemical analysis.

DEPARTMENT OF COMPUTER SCIENCE

Program Outcome, Program Specific Outcome and Course outcome:

4 Years/ 3 Years Major and Minor Course in Mathematics under CCFUP

Program Specific Outcome:

- (i) The students can understand that mathematics has wide applications in different branches of science, commerce & arts.
- (ii) Familiarize the students with suitable tools of mathematical analysis to handle issues and problems in mathematics and related sciences.
- (iii) Acquire good knowledge and understanding to solve specific theoretical and applied problems in advanced areas of mathematics and statistics.
- (iv) Provide students/learners sufficient knowledge and skills enabling them to undertake further studies in mathematics and its allied areas on multiple disciplines concerned with mathematics.
- (v) Encourage the students to develop a range of generic skills helpful in employment, internships and social activities.
- (vi) The students have their course on Algebra, Real Analysis, Computer Programming in C++, Numerical Analysis, Mechanics & Differential Equation. All these courses help the students to do their research in future study
- (vii) All the topics of courses of Mathematics are helpful for the higher study in Mathematics.
- (viii) Some courses of Mathematics help the students to sit in competitive examination like JECA, JEM, etc.



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(ix) This course of Mathematics will provide different job-oriented courses which will be beneficial to the students.

(x) Many of our students are successfully doing their research work and many are placed in Banks, Companies etc.

Program Outcome:

The Bachelor's Degree in Mathematics is awarded to the students on the basis of knowledge, understanding, skills, attitudes, values and academic achievements sought to be acquired by learners at the end of this program. Hence, the learning outcomes of mathematics for this course are aimed at facilitating the learners to acquire these attributes, keeping in view of their preferences and aspirations for knowledge of mathematics. Mathematics is the study of quantity, structure, space and change. It has very broad scope in science, engineering and social sciences. The key areas of study in mathematics are Calculus, Algebra, Geometry, Analysis, Differential Equations and Mechanics etc. The followings are some Program Outcome of under graduate Mathematics:

(i) After completion of the program the students perform more scientifically and logically for the betterment.

(ii) The program develops the skill to deal with the abstract idea of Mathematics.

(iii) The students can continue the study of Mathematics at the post graduate level or other related fields.

(iv) This program teaches the students to think logically which will help them in all future aspects of life.

(v) It teaches the students how to grow the teaching ability in education purpose, i.e., in school or under-graduate or post-graduate level

(vi) It develops the critical thinking of the students for solving complex problems.

Course outcome:

MATH101(Major) / MATH 1021(Minor): Calculus, Geometry & Vector Calculus

It grows interest and develops the basic concepts in calculus, geometry and Vector Calculus and would gain general idea of advance calculus and its application, also it help the students for solving complex problem using vector calculus and geometry. It gains analytical and reasoning skills which improve their thinking power and enhance their problem solving ability.

MATH2011(Major) / MATH 2021(Minor): Introductory Algebra & Number Theory

The students would be able to access and generate different tricky examples involving integers during their study of ring theory and field theory and also simplify mathematical problem in different field of science using complex number. The students would gain knowledge of number theory and various properties of complex number and understand the basic concept of group, ring and field. The student motivate themselves for future research after getting knowledge of modern algebra from classical algebra and number theory.

MATH3011(Major): Real Analysis I

On completion of the course the students would be able to characterize subsets of real number set \mathbb{R} , sequences and subsequences in \mathbb{R} . The students would gain some fundamental concepts of real analysis which help them to learn all



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the branches of mathematics smoothly and also gain analytical and reasoning skills, which improve their thinking power.

MATH3012(Major): Linear Algebra

The students would be able to compute a basis and dimension of a vector space, compute the characteristic polynomial, minimal polynomial, eigen value, eigen vector of a matrix as well as of a linear operator, able to solve system of linear equations. The students would gain fundamental concepts of vector space, linear transformation, matrix representation of a linear transformation, solution methods of a system of equations, canonical forms of a matrix, diagonalization, orthogonalization, which will be useful for further studies in every branch of mathematics and also gain analytical and reasoning skills, which improve their thinking power.

MATH4011(Major): Metric Spaces

Students would be able to study the metric properties and topological properties of a metric space. It motivated to work out various problems independently on the allied topics. It helps the students to read and to learn further topics in analysis and motivates them to make easier to understand and use of functional analysis in applied problems.

MATH4012(Major): Group Theory & Ring Theory

The students would be able to understand the beauty of structures and structure preserving maps and simplify a mathematical problem in different field of science using group and ring theory. The students would gain descriptive idea of group and ring theory and properly analyze algebraic properties of ring of integers. They would be expertized in solving many tricky problems in group and ring theory.

MATH4013(Major): Multivariate Calculus & Tensor Calculus

The students would be able to evaluate limit and examine continuity of functions of several variables. They also able to calculate various problems on tensor algebra and tensor calculus. The students would gain general idea on limit, continuity, derivatives, integration of multivariate functions and general idea of tensors. They also gain analytical and computing skills, which improve their visual and calculating powers.

Skill Enhancement Course (SEC):

MATH1051: Graph Theory

The students would be able to understand various graph theoretic concepts and their applications and solve real world problems that can be modelled by graphs. The students would gain general idea of graph theory and its real life applications and understand about graphic sequence. They can use graphs for various map colouring problem. This idea helps the students to apply graphs in computer science.

MATH2051: Programming in C

The students would be able to learn different types of operators and use of formatted and non formatted input and output statements, also learn the concept of array, string handling arrays. They also able to write programmes using structures and pointers. The students would gain general idea about the writing of different C programme using



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branching and looping statements, arrays, functions, structures and pointers. They also gain programme writing and reasoning skills which improve their thinking power.

MATH3051: Mathematical Modelling

Students to acquire basic knowledge concerning formation of various models. Students to be exposed to various mathematical models and their real-life applications and benefited in simulations, understanding and predicting complex systems. The students would gain to understand the construction/framing mathematical models and solve the real-world problems mathematically. The students gain knowledge to use mathematical tools and techniques for the outcomes of those problems.

3-Year Major (B.Sc.- General) in Computer Science

Under Curriculum and Credit Framework for Undergraduate Programmes (CCFUP) as per NEP, 2020

Program outcomes:

The undergraduate program of Computer Science helps student to get a knowledge base in the following ground of Computer Science –

Students will develop good programming skills in the first year. At the same time students are familiarized with the hardware of computers early on. Besides that, the curriculum aims to develop employability skills early.

Students will be equipped the with tools and techniques of Artificial Intelligence, Machine Learning and a pathway on Data Science.

With the option to obtain specialization in an area of their choice, the curriculum prepares the students to take up research projects in their final year.

Program specific outcomes:

1. Proficiency in writing readable, correct, efficient, and secure programs of modest complexity.
2. Ability to design efficient algorithms using appropriate data structures for new problems.
3. Understanding of computer architecture, operating systems, computer networks and database management systems and their role in the performance of software applications.
Understanding of theoretical foundations and limits of computing.
4. Ability to develop good quality software by following the processes of software development life cycle.
5. Ability to extract information and analyze large volumes of data employing a range of techniques for artificial intelligence and learning.



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6. Ability to develop an end-to-end compiler using compiler designing tools and techniques.
7. Ability to protect the data and software from various types of cyber-attacks.

Course Outcomes:

SEMESTER-I

(MAJOR)

COURSE TITLE: COMPUTER FUNDAMENTALS & DIGITAL LOGIC (CODE: COMP 1011) (Theory + Practical)

Course Objective:

This course introduces the students to the fundamental concepts of digital computer organization and design. It aims to develop a basic understanding of the building blocks of the computer system and highlights how these blocks are organized together to architect a digital computer system. The course teaches the fundamentals of digital systems, applying the logic design and development techniques. This course forms the basis for the study of advanced subjects like Computer Architecture and Organization, Microprocessor through Interfacing, VLSI Designing etc.

Course Learning Outcomes:

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

1. Acquire the basic knowledge of digital logic to understand digital electronics circuits.
2. Prepare students to perform the analysis and design of various digital electronic circuits.
3. Design and simplify combinational and sequential circuits using basic building blocks
4. Represent data in binary form, convert numeric data between different number systems and perform arithmetic operations in binary.
5. Simulate the design of a basic computer using a software tool/ digital trainer kit.



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(MINOR)

COURSE TITLE: COMPUTER FUNDAMENTALS & DIGITAL LOGIC (CODE: COMP 1021) (Theory + Practical)

Course Objective:

This course introduces the students to the fundamental concepts of digital computer organization and design. It aims to develop a basic understanding of the building blocks of the computer system and highlights how these blocks are organized together to architect a digital computer system. The course teaches the fundamentals of digital systems, applying the logic design and development techniques. This course forms the basis for the study of advanced subjects like Computer Architecture and Organization, Microprocessor through Interfacing, VLSI Designing etc.

Course Learning Outcomes:

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

1. Acquire the basic knowledge of digital logic to understand digital electronics circuits.
2. Prepare students to perform the analysis and design of various digital electronic circuits.
3. Design and simplify combinational and sequential circuits using basic building blocks
4. Represent data in binary form, convert numeric data between different number systems and perform arithmetic operations in binary.
5. Simulate the design of a basic computer using a software tool/ digital trainer kit.

MULTIDISCIPLINARY COURSES (MDC)

COURSE TITLE: BASIC IT TOOLS (CODE: COMP 1031) (Theory)

Course Objective:

The goal of this course is to present overview of IT tools used in day-to-day use of computers and data base operations. The Course has been designed to provide knowledge on various hardware and software components of computer,



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operating system, various packages used for different applications, data base concepts & operations and various issues related to IT and application of IT.

Course Learning Outcomes:

On successful completion of the Course, a student will:

1. Acquire the foundation level knowledge required to understand computer and its operations.
2. Understand the hardware and software components of the computer.
3. Understand the basic concept of operating system and get knowledge about various different operating systems.
4. Understand to use the packages of word processing, spread sheet and presentation in detail.
5. Understand various data base concepts and operations.
6. Understand the issues related to IT and IT applications
7. Prepare research and academic related presentations.

SKILL ENHANCEMENT COURSE (SEC)

COURSE TITLE: PROGRAMMING IN PYTHON (CODE: COMP 1051) (Practical)

Course Objective:

The course is designed to introduce programming concepts using Python to students. The course aims to develop structured as well as object-oriented programming skills using Python. The course also aims to achieve competence amongst its students to develop correct and efficient Python programs to solve real life problems.

Course Learning Outcomes:

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

1. Develop, document, and debug modular Python programs of reasonable complexity.
2. Implement arrays and user defined functions in Python.
3. Solve real life problems of reasonable complexity using suitable and efficient programming constructs in Python.
4. Solve real life problems of reasonable complexity using the concepts of object-oriented programming in Python.

SEMESTER II

(MAJOR)



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COURSE TITLE: PROGRAMMING FUNDAMENTALS USING C (CODE: COMP 2011)

(Theory + Practical)

Course Objective:

The course is designed to provide complete knowledge of C language. Students will be able to develop logics which will help them to create programs, applications in C. Also, by learning the basic programming constructs they can easily switch over to any other language in future.

Course Learning Outcomes:

After successful completion of the Course a student will be able to:

1. Develop problem solving skills coupled with top-down design principles.
2. Become skilled at developing simple algorithms and flow charts.
3. Convert the algorithms into simple C programs.
4. Understand code organization and functional hierarchical decomposition.
5. Develop simple C programs for solving real life problems.

(MINOR)

COURSE TITLE: PYTHON PROGRAMMING (CODE: COMP 2021)

(Theory + Practical)

Course Objective:

The course is designed to introduce programming concepts using Python to students. The course aims to develop structured as well as object-oriented programming skills using Python. The course also aims to achieve competence amongst its students to develop correct and efficient Python programs to solve real life problems.

Course Learning Outcomes:

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

1. Develop, document, and debug modular Python programs of reasonable complexity.
2. Implement arrays and user defined functions in Python.
3. Solve real life problems of reasonable complexity using suitable and efficient programming constructs in Python.
4. Solve real life problems of reasonable complexity using the concepts of object-oriented programming in Python.



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MULTIDISCIPLINARY COURSES (MDC)

COURSE TITLE: INTRODUCTION TO INTERNET (CODE: COMP 2031) (Theory)

Course Objective:

This course is intended to teach the basics involved in publishing content on the World Wide Web. This includes the ‘language of the Web’ – HTML and the fundamental principles of how the Internet and the Web function.

Course Learning Outcomes:

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

1. Discuss elementary Internet concepts and history.
2. Make a successful Internet connection.
3. Demonstrate simple principles of Internet Protocol (IP) addressing.
4. Use and customize a web browser. Comprehend the basics of the internet and web terminologies.
5. Comprehend the basics of the internet and web terminologies

SKILL ENHANCEMENT COURSE (SEC)

COURSE TITLE: SYSTEM ADMINISTRATION AND MAINTENANCE (CODE: COMP 2051) (Practical)

Course Objective:

System administration is the field of work in which someone manages one or more systems, be they software, hardware, servers or workstations. Its goal is ensuring the systems are running efficiently and effectively.

Course Learning Outcomes:

After successful completion of the Course a student will be able to:

1. Troubleshoot and fix issues that compromise system performance or access to an IT service.
2. Make regular system improvements, such as upgrades based on evolving end-user and business requirements.
3. Maintain common system and network administration tasks and practices and how to implement and maintain standard services like email, file sharing, DNS and similar tasks.



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SEMESTER-III

(MAJOR)

COURSE TITLE: DISCRETE STRUCTURES (CODE: COMP 3011) (Theory)

Course Objective:

This course is designed as a foundational course to make students learn about the mathematical constructs that are used in Computer Science such as Boolean algebra, sets, relations, functions, principles of counting, and recurrences. In this course, the knowledge of mathematical notation, ideas and concepts learnt at the pre-college levels is extended to orient the students towards mathematical thinking required in Computer Science.

Course Learning Outcomes:

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

1. Relate mathematical concepts and terminology to examples in the domain of Computer Science.
2. Model real world problems using various mathematical constructs.
3. Use different proofing techniques; construct simple mathematical proofs using logical arguments.
4. Formulate mathematical claims and construct counter examples

(MAJOR)

COURSE TITLE: DATA STRUCTURES (CODE: COMP 3012) (Theory + Practical)

Course Objective:

The course aims at developing the ability to use basic data structures like arrays, stacks, queues, lists, trees to solve problems. C++ is chosen as the language to understand implementation of these data structure.

Course Learning Outcomes:

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

1. Compare two functions for their rates of growth.
2. Understand abstract specification of data-structures and their implementation.
3. Compute time and space complexity of operations on a data-structure.
4. Identify the appropriate data structure(s) for a given application and understand the trade-offs involved in terms of time and space complexity.



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5. Apply recursive techniques to solve problems

MULTIDISCIPLINARY COURSE (MDC)

COURSE TITLE: INTRODUCTION TO CYBER SECURITY (CODE: COMP 3031)

(Theory)

Course Objective:

It aims to educate individuals about potential cyber threats, best practices for safeguarding sensitive information, and how to respond effectively in case of a security incident.

Course learning outcome:

Upon completion of the degree program, students will be able to:

1. Analyze and evaluate the cyber security needs of an organization.
2. Conduct a cyber security risk assessment.
3. Measure the performance and troubleshoot cyber security systems.
4. Implement cyber security solutions.
5. Be able to use cyber security, information assurance, and cyber/computer forensics software/tools.
6. Identify the key cyber security vendors in the marketplace.
7. Design and develop a security architecture for an organization.

SKILL ENHANCEMENT COURSE (SEC)

COURSE TITLE: PHP PROGRAMMING (CODE: COMP 3051) (Practical)

Course Objective:

The course is designed to introduce programming concepts using PHP to students. The course aims to develop structured as well as object-oriented programming skills using PHP. The course also aims to achieve competence amongst its students to develop correct and efficient PHP programs to solve real life problems.

Course learning outcome:

In this course, students will learn:

1. How to use PHP's built-in server to serve static resources.
2. How to use PHP to add some dynamic aspects to our pages.
3. How to use HTML forms.
4. The difference between GET and POST requests.
5. How to use cookies to store some data in the browser and pass it to the next request.



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6. How to use a session cookie to store data on the server instead of in the browser.
7. How to build an authentication system.
8. How to restructure the project.
9. How to upload files to the website.
10. How to build a custom solution that catches PHP errors and exceptions and shows a proper error page for them.
11. How to describe and test all the features you've built in this course using an automated test runner.

SEMESTER-IV

(MAJOR)

COURSE TITLE: OPERATING SYSTEMS (CODE: COMP 4011)

(Theory + Practical)

Course Objective:

The course provides concepts that underlie all operating systems not tied to any particular operating system. The emphasis is done to explain the need and structure of an operating system using its common services such as process management (creation, termination etc.), CPU Scheduling, Process Synchronization, Handling Deadlocks, main memory management, virtual Draft memory, secondary memory management. The course also introduces various scheduling algorithms and structures/techniques used by operating systems to provide these services.

Course Learning Outcomes:

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

1. Understand the need of an Operating System & Define Multiprogramming and Multithreading concepts.
2. Implement Process Synchronization service (Critical Section, Semaphores), CPU scheduling service with various algorithms.
3. Learn Main memory Management (Paging, Segmentation) algorithms, Handling of Deadlocks
4. Identify and appreciate the File systems Services, Disk Scheduling service

(MAJOR)

COURSE TITLE: PROGRAMMING IN JAVA (CODE: COMP 4012)

(Theory + Practical)

Course Objective:

This course is designed to develop structured as well as object-oriented programming skills using Java programming language. The course provides a complete understanding of the object-oriented programming features, namely Encapsulation, Abstraction, Inheritance and Polymorphism along with an in-depth knowledge of Java constructs.



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Course Learning Outcomes:

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

1. Explain significance of object-oriented paradigm.
2. Solve programming problems using Java.
3. Create classes and reuse them.
4. Implement programs using dynamic memory allocation.
5. Handle external files as well as exceptions.

(MAJOR)

COURSE TITLE: DATABASE MANAGEMENT SYSTEMS (CODE: COMP 4013)

(Theory + Practical)

Course Objective:

The course introduces the students to the fundamentals of database management system and its architecture. Emphasis is given on the popular relational database system including data models and data manipulation. Students will learn about the importance of database structure and its designing using conceptual approach using Entity Relationship Model and formal approach using Normalization. The importance of file indexing and controlled execution of transactions will be taught. The course would give students hands-on practice of structured query language in a relational database management system and glimpse of basic database administration commands.

Course Learning Outcomes:

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

1. Use database management system software to create and manipulate the database.
2. Create conceptual data models using entity relationship diagrams for modeling real-life situations and designing the database schema.
3. Use the concept of functional dependencies to remove redundancy and update anomalies.
4. Apply normalization theory to get a normalized database scheme.
5. Write queries using relational algebra, a procedural language.



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6. Implement relational databases and formulate queries to get solutions of a broad range of data retrieval and data update problems using SQL.
7. Write and execute SQL queries through a high-level language via ODBC connection
8. Database administration commands such as creating/removing users, granting/revoking different privileges to the database users; creating assertions, triggers, and indexes. 9. Learn the importance of index structures and concurrent execution of transactions in database systems.

(MINOR)

COURSE TITLE: PROGRAMMING IN C (CODE: COMP 4021)

(Theory + Practical)

Course Objective:

The course is designed to provide complete knowledge of C language. Students will be able to develop logics which will help them to create programs, applications in C. Also, by learning the basic programming constructs they can easily switch over to any other language in future.

Course Learning Outcomes:

After successful completion of the Course a student will be able to:

1. Develop problem solving skills coupled with top-down design principles.
2. Become skilled at developing simple algorithms and flow charts.
3. Convert the algorithms into simple C programs.
4. Understand code organization and functional hierarchical decomposition.
5. Develop simple C programs for solving real life problems.



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Department of Microbiology

Programme outcomes (POs), Course Outcome (COs)

Programme outcomes:

The under-graduate programme of Microbiology enhances students' skills in the following aspects:

- Understood the basic concepts and fundamental principles related to various scientific facts and their significance in our everyday life.
- Acquired the knowledge about different instruments and their uses. This knowledge helps in skill development of students in practical fields.
- The skills of observations from the scientific experiments make them able to analyze the scientific data critically and systematically.
- Acquired the skills of planning, habit of working in groups, field survey, deliver own view after analyzing various scientific phenomenon and other skills which strengthen their future.
- Developed scientific outlook not only with respect to science subjects but also in all aspects related to life.
- Besides regular curriculum, department allows some of the extracurricular programmes such as, singing, dancing, making wall magazine etc.

Programme specific outcomes:

- The whole biosphere depends on the activities of microorganisms and they influence human society in innumerable ways. Students will appreciate the biological diversity of microbial forms. They will become aware of the important role of microorganisms play in build up and maintenance of a clean and healthy environment.
- Students, after studying Microbiology, will acquire precise knowledge on different microbial culture techniques. This knowledge will help them in fields of industry and research work.



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- Students will gather clear knowledge about sterilization and disinfectant procedures. Students will be able to implement this knowledge in preventing to spread contagious microbial diseases in community.
- From this programme, students will learn various industrial processes like “Fermentation” and the gain knowledge on handling of different industrial instruments through visiting programme in industry and institution which is included in our Microbiology programme.
- Students become familiar with various environmental issues such as, waste management, roll of microbes in green house effect, GM crops etc.
- Students will able to communicate and analyze the core theories in Microbiology and related sciences (Biochemistry, Immunology, Medical Microbiology, Molecular Biology, Genetic Engineering, Bioinformatics)
- From the practical microbiology, students will become familiar with laboratory rules and regulations, various instruments, their standard operating procedures and their maintenance. This practical based knowledge will become very much helpful for students in their professional fields.

Course outcomes:

- The subject “Microbiology” has two distinct prospective – Academic and Applied. Thus the Microbiology course has been designed in theoretical and practical parts.
- The undergraduate Microbiology syllabus has been designed under Curriculum & Credit Framework for Undergraduate Programme (CCFUP) as per National Educational Policy (NEP), 2020.
- The B.Sc. Microbiology honours syllabus has been divided in Eight semester and B.Sc Microbiology general syllabus has been divided in six semester programme.

Semester – I:

Major: (Introduction to Microbiology and Biomolecules)

- Students will acquire knowledge and basic fundamental concepts on both theory and practical of Microbiology.
- They will have idea on how the subject progressed from beginning, till date.
- Students will also have grasp on different groups of microorganisms and their unique characters that distinguishes them from the rest.
- They will also gain an understanding on laboratory safety rules and regulations; sterilization; how to operate autoclave and other basic equipments of microbiology laboratory, prepare culture media and isolate microorganisms from air, water and soil samples.

Minor Course-I: (Introduction & Scope of Microbiology)

- Students will acquire knowledge and basic fundamental concepts on both theory and practical of Microbiology.
- They will have idea on how the subject progressed from beginning, till date.



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- Students will also have grasp on different groups of microorganisms and their unique characters that distinguishes them from the rest.
- They will also gain an understanding on laboratory safety rules and regulations; sterilization; how to operate autoclave and other basic equipments of microbiology laboratory, prepare culture media and isolate microorganisms from air, water and soil samples.

Multi-Disciplinary/ Interdisciplinary Course-I: (Microbiology for the beginners)

- Students will acquire basic idea on how the subject progressed from beginning, till date.
- They will also have grasp on different groups of microorganisms and their unique characters that distinguishes them from the rest.
- Students will also gain an understanding on working principles of different types of microscopes as well as basic understanding on different types of sterilization: their selection, process and principle.

Skill Enhancement Course –I: (Microbiological Analysis in health care)

- Students will acquire basic fundamental theoretical concepts regarding microbiological analytical methods, tools and techniques for detection of pathogenic microorganisms from clinical samples using microscopic staining based techniques, based on culture dependent biochemical reactions and finally serological and molecular methods
- The course aims to teach students how to control microorganisms using antibiotics.
- Students will also learn basic standard techniques for microbiological examination of water and infer its quality.

Semester- II:

Major: (Bacteriology)

- Students will acquire basic fundamental concepts on both theory and practical of Bacteriology.
- They will have grasp on the detail cell ultrastructure, cultivation methods, nutritional types, growth and reproduction, control and finally systematics as well as general characteristics and importance of groups of bacteria and archaea.
- Students will also learn how to isolate, cultivate and preserve bacteria in laboratory; determine viable count of bacteria and study staining properties such as Simple, Negative Gram's as well as Endospore staining



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Minor Course-II: (Basic Bacteriology)

- Students will acquire basic fundamental concepts on both theory and practical of Bacteriology.
- They will have grasp on the detail cell ultrastructure, cultivation methods, nutritional types, growth and reproduction, control and finally systematics as well as general characteristics and important of groups of bacteria and archaea.
- Students will also learn how to isolate, cultivation and preserve bacteria in laboratory; determine viable count of bacteria and study staining properties such as Simple, Negative Gram's as well as Endospore staining.

Multi-Disciplinary/ Interdisciplinary Course-II: (Microbes and Environment)

- Students will acquire basic fundamental concepts on environmental microbiology. This includes soil, water, air and human body inhabiting microbes. Interactions among microbes as well as with plants and animals; role of microbes in biogeochemical cycles and finally quality control of water.
- Students will learn how to isolate bacteria from air and soil; assess microbiological quality of water; isolation of starch degrading bacteria and *Rhizobium* from root nodules.

Skill Enhancement Course- 2: (Biofertilizers and Biopesticides)

- Students will acquire basic fundamental concepts on microorganism based bio-fertilizers and bio-pesticides. This includes knowledge on symbiotic and non-symbiotic Nitrogen fixing, phosphate solubilizing microorganisms and mycorrhizal based bio-fertilizers, their utility and field applications.

Semester- III:

Major: (Chemistry of Biomolecules)

- Students will learn basic fundamental concepts (both theory & Practical) of biochemistry, in relation to biomolecules and about enzyme functions how do they work, their types, classification, mechanism of action and inhibition types.
- Through practical they will learn quantitative estimation of carbohydrates, amino acids, organic acid as well as nucleic acids. They will also study how to assay an enzyme and will study effect of different factors on the activity of enzyme (through amylase as case study).

Major: (Biophysical Chemistry)



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- Students will learn the basic concepts of biophysical chemistry, which starts with understanding the properties of water and its structure –function correlation; Concepts of buffers and ways they regulate concentration of hydrogen as well as hydroxyl ions.
- concepts of bioenergetics and the way they govern or regulate biochemical processes, pathways etc. Basic concepts of spectrophotometry, radioactivity, chromatography and electrophoresis will be inculcated. Practical skills for separation of mixture of amino acids (by TLC), proteins (by PAGE & chromatography techniques) and other analytes by centrifugation will be inculcated. Moreover, basic concept of pH, buffers etc. will be inculcated through hands on preparatory experiments.

SEC (Skill Enhancement Course): (Food Fermentation Techniques)

- Students will learn different types of fermented foods, their advantages and health benefits; production process for milk based, grain based, and vegetable based fermented foods (pickles and sauerkraut); fermented meat and fish; probiotic foods.
- They will also learn practical skills to perform experiments to determine oxidative/fermentative reaction of microorganisms, isolation of microbes from Dahi, study of microbes in fermented rice, preparation of fermented milk products and wine.

Semester – IV:

Major: (Eukaryotic Microbiology & Plant Pathology)

- The students will acquire knowledge on eukaryotic microorganisms and plant pathology. This includes study of general characteristics and diversity of Algae, fungi and protozoa: their classifications, diversity in morphological forms and reproductive processes.
- They will learn basic concepts related to host –pathogen interactions, development and progression of disease in host and different factors affecting host-pathogen interactions. Case study of disease of economically important plants (from this geographical region).
- Students will also acquire practical skills related to identification of algae, fungi and protozoa. Understanding Koch's postulates and study of plant pathogens, as well as plant disease samples through microscopic examination and permanent slides.

Major:(Cell Biology)



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- Students will learn to compare prokaryotic and eukaryotic cells and know structure-function of cell organelles, cytoskeleton, different types of filaments; will learn and understand ultrastructure of nucleus, chromatin, nucleolus; protein sorting and transport and cell signaling processes, their components, etc.; cell cycle, cell divisions, apoptosis and cancer.
- They will learn practical skills of staining cells, DNA and study different cell organelles, different stages of cell division (i.e. mitosis & meiosis).

Major: (Virology)

- Students will learn properties of viruses, their discovery, classification, structural diversity, isolation, purification and cultivation strategies; bacteriophages, their life cycle types; transmission of viruses, their reproduction, assembly and maturation; concept of viruses and cancer, concept of oncogenic and protooncogenic viruses and their role in cancer; control of viral diseases and application of virology.
- They will also learn practical skills for isolation of bacteriophage, isolation of phage DNA and its digestion using a restriction endonuclease enzyme and will carry out study of TMV infection on tomato plant, induced by TMV infected tobacco extract.

Minor Course: (Introduction to Virology)

- Students will learn properties of viruses, their discovery, classification, structural diversity, isolation, purification and cultivation strategies; their life cycle types; transmission of viruses and their reproduction; concept of oncogenic and proto-oncogenic viruses; control of viral diseases and application of virology.
- They will also learn structural diversity of viruses using electron micrographs and will also understand practical skills for isolation of bacteriophage.

- ❖ After completion of undergraduate programme from our Microbiology department, most of the students go for post-graduation.
- ❖ Many students of our department have been placed in hospitals and industries as microbiologists, many students have got admission in different research institute and universities for PhD programme.



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Programme outcomes (POs), Course Outcome (COs)

Course objective and Course Outcome of Curriculum and Credit Framework for Undergraduate Programmes (CCFUP) as per NEP, 2020

MAJOR-PHYSICS COURSE

Semester I

MAJOR-I: PHYS1011: MATHEMATICAL PHYSICS-I

COURSE OBJECTIVE: The aim of this course is to equip the students with mathematical methods that are important prerequisites for physics courses.

MAJOR-I: PHYS1011: MATHEMATICALPHYSICS-I Practical:

COURSE OBJECTIVE: The aim of this course is to learn computer programming and numerical analysis and to emphasize its role in solving problems in Physics.

COURSE OUTCOME: On completion of this course, the student must be able to perform different mathematical operations like calculus and vector operations which are extremely essential to study theoretical and experimental physics.

Semester II

MAJOR II: PHYS2011: MECHANICS

COURSE OBJECTIVE: The objectives of this course is to provide an in-depth understanding of the principles of Newtonian mechanics and apply them to solve problems involving the dynamics of classical mechanical systems.

COURSE OUTCOME: This course in Mechanics serves as the foundation for further progress towards the study of physics at graduate or post-graduate level. Upon completion of the course, the student will be able to apply Newton's laws of motion to different force fields for a single particle and for a system of particles.

Semester III

MAJOR-III: PHYS3011: Electricity and Magnetism

Course Objective: The objective of this paper is to give the basic concept as well as an indepth understanding of the principles of electricity and magnetism and apply them to solve the problems related.

Course Outcome: At the end of this course, students will be able to comprehend the concept of electric field, electric flux, magnetic field and their origin. They will learn to apply the Gauss's theorem to find the electric fields for different types of charge distribution. The students will develop a sound perception about Electrostatics, Magneto-statics, Electric current and electromagnetic induction.

MAJOR-III: PHYS3012: Waves and Optics

Course Objective: The objective of this course is to provide an in-depth understanding of the nature of waves in general, sound wave as an example of mechanical wave and light as an electromagnetic wave. It is also intended to provide a comprehensive idea of some phenomena like interference, diffraction and polarisation and their physical explanation in terms of the wave theory of light.



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Course Outcome: The outcome of the paper includes the knowledge of vibrations, propagation of waves, vibrations of air column, and harmonics of the strings. The paper has another outcome of offering knowledge of wave properties of light & corresponding phenomena.

Semester IV

MAJOR-IV: PHYS4011: Heat and Thermodynamics

Course Objectives: The objective of the course is to infuse ideas of thermodynamic systems, thermodynamic variables, thermodynamic processes, and allied phenomena. It is designed to familiarize students with thermodynamic potentials, the kinetic theory of gases, and the theory of radiation.

Course Outcome: On completion of this course, the students will learn the kinetic theory of gases, the basic laws of thermodynamics, the applications of the well-known Maxwell's relations, the underlying Physics behind the Joule Thompson effect and the spectral distribution of the blackbody radiation.

MAJOR IV: PHYS4012: Mathematical Physics-II

Course Objectives: The emphasis of this course is on applications of mathematical techniques in solving problems of interest to physicists. Students are to be examined on the basis of problems, seen and unseen.

Course Outcome: After successful completion of this course, students will be able to formulate problems of Physics in the language of Mathematics.

MAJOR IV: PHYS4012: Mathematical Physics-II

Course Objective: The aim of this Lab is to use the computational methods to solve physical problems. Course will consist of lectures (both theory and practical) in the Lab. Evaluation done not on the programming but on the basis of formulating the problem.

Course Outcome: The emphasis of the course is on applications in solving problems of interest to physicists. Students are to be examined on the basis of problems, seen and unseen.

MAJOR-IV:PHYS4013: Classical Mechanics and Special Theory of Relativity

Course Objectives: This course covers the Lagrangian and the Hamiltonian formulation of mechanics in systems with constraints, rigid body dynamics, Generating functions for canonical transformations, invariants. The course also covers the Special theory of relativity.

Course Outcome: On successful completion of this course the students will have in-depth understanding of Lagrangian and the Hamiltonian formulation of mechanics rigid body dynamics, and Special theory of Relativity



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MINOR-PHYSICS COURSE

Semester I

MINOR-I: PHYS1021: MATHEMATICAL PHYSICS-I

COURSE OBJECTIVE: The aim of this course is to equip the students with mathematical methods that are important prerequisites for physics courses.

MINOR-I: PHYS1021: MATHEMATICAL PHYSICS-I Practical:

COURSE OBJECTIVE: The aim of this course is to learn computer programming and numerical analysis and to emphasize its role in solving problems in Physics.

COURSE OUTCOME: On completion of this course, the student must be able to perform different mathematical operations like calculus and vector operations which are extremely essential to study theoretical and experimental physics.

Semester II

MINOR II : PHYS2021: MECHANICS

COURSE OBJECTIVE: The objectives of this course is to provide an in-depth understanding of the principles of Newtonian mechanics and apply them to solve problems involving the dynamics of classical mechanical systems.

COURSE OUTCOME: This course in Mechanics serves as the foundation for further progress towards the study of physics at graduate or post-graduate level. Upon completion of the course, the student will be able to apply Newton's laws of motion to different force fields for a single particle and for a system of particles.

Semester IV

MINOR IV: PHYS4021: Thermal Physics

Course Objective: The objective of the first part of the course is to infuse ideas of the Kinetic theory of gases, Thermodynamic laws, Thermodynamic potentials, and the Theory of radiation. The second part is devoted to giving a basic introduction to Statistical Mechanics.



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Course Outcome: Upon completion of this course, the students will grasp the idea of laws of thermodynamics, the Blackbody the basics of Statistical mechanics.

MULTI-DISCIPLINARY COURSE (PHYSICS)

Semester I

MULTI-DISCIPLINARY-1: PHYS1031: CNCEPTS OF PHYSICS 1

COURSE OBJECTIVE: The aim of the course is to enable the students to be familiar with basic Physics.

COURSE OUTCOME: Students will develop the problem-solving capability and also learn the applications of Newtonian mechanics in daily life.

Semester II

MULTI-DISCIPLINARY-2: PHYS2031 CNCEPTS OF PHYSICS 2

COURSE OBJECTIVE: The aim of the course is to enable the students to be familiar with basic Physics.

COURSE OUTCOME: Students will develop the problem-solving capability and also learn the applications of Newtonian mechanics in daily life.

Semester III

MULTI-DISCIPLINARY: PHYS3031: Electricity, Magnetism and Electronics

Course Objective: This course is designed to give the students a basic understanding of electricity, magnetism and electronics. The student will also gain a preliminary knowledge of some electrical and electronic instruments.

Course Outcome: After successful completion of this paper students of other disciplines will be able to comprehend the basics of electricity, magnetism and electronics. The students will be acquainted with basic electrical and electronic devices.

SEC-PHYSICS

Semester I

SEC-1:PHYS1051: RENEWABLE ENERGY AND ENERGY HARVESTING

COURSE OBJECTIVE: To impart knowledge and hands on learning about various alternative energy sources like Wind, Solar, Mechanical, Ocean, Geothermal etc. To review the working of various energy harvesting systems which are installed worldwide.

COURSE OUTCOME: The students are expected to learn not only the theories of the renewable sources of energy, but also to have hands-on experiences on them wherever possible.



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Semester-II

COURSE OBJECTIVE: The aim of this course is to enable the students to understand the basics of electronic circuits. Practical design and trouble shoot of electronic instrument is also a major objective of this Course.

COURSE OUTCOME: After the completion of the course the student will acquire necessary skills/ hands on experience /working knowledge on Multimeter, voltmeters, ammeters, electric circuit elements, dc power sources. With the knowledge of basic electronics a student can able to detect troubleshoot and repair some of the electronic instruments used in our daily life.

Semester-III

SEC-3:PHYS3051: Basic Instruments and their Usage

Course Objective: This course is designed to give the students an exposure with various aspects of electrical and optical instruments and their applications in experimental physics.

Course Outcome After completion of this course, the students will gain knowledge the in setting up electrical and optical experiments.

Department of Physiology Program Specific Outcome and Course Specific Outcome

Physiology Honours/ UG Major:

Program Specific Outcome:

Semester Program Specific Outcome (Semester Specific)

SEM I

This Semester is crucial for the students as basic concepts are developed which will help them to comprehend about contribution of Indian Scientists or Physiologists in the field of Physiology and Medicine, Cell biology. They also develop their skill on Hematological techniques and acquire their knowledge about Nutrition and Dietetics. These core courses are needed to be studied in details. Students can apply their acquired knowledge in their higher studies as well as to prepare for different competitive exams.

Students often find their interest from the given topics and can pursue career on molecular biology, hematology, nutrition and dietary management.

They develop an interest for the subject and often choose academic career in these fields.

SEM II

After completion of SEM-I, students successfully acquires both theoretical and practical knowledge on Circulating body fluids, Clinical biochemistry and basic concepts on Environmental Physiology and Human health. They gain Practical experience on Circulating body fluids parameter. Students gain conceptual knowledge about the constituents of blood and body fluids and various pollutants. After interacting with these topics in this semester, students open up their inquisitive mind.

Students are able to clear different exams like IIT-JAM, NET, SET, TIFR-ICMR after thoroughly learning these chapters in both the Semesters.

SEM III

Students after studying SEM III, get knowledge on properties and functions of blood and lymph.



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Pursue idea on features of heart, systematic and regional circulation, concept of electrocardiogram and identifying cardiac arrhythmia and other cardiac tissues. Get idea about ascending and descending tracts, physiology of pain, role of basal ganglia and cerebellum in controlling posture and movement, functions of higher centre of brain and able to use techniques, skills, resources for practicing in the field of hematology and cardiovascular diseases. They gain adequate knowledge to pursue higher studies in neuroscience, good research work on neurodegenerative diseases like Parkinson's disease, Alzheimer's disease, cognitive neurobiology, learning and memory, etc. They acquire ability to design and conduct experiments, as well as to analyze and interpret data, and synthesis of information.

SEM IV

After successfully completion of the courses of SEM-IV students have both theoretical and practical knowledge about metabolism & nutrition, gastrointestinal functions, respiration and clinical biochemistry or hematological techniques. The skill enhancement courses will open up technical and practical site for the students and they will able to acquire knowledge in the applied field of clinical biochemistry and hematological techniques. After studying all these courses in detail most of the students go for the post-graduation and higher studies. They mainly go for various research fields like nutrition, biochemistry, high altitude physiology etc. and get established in research and development section of many medical and nutrition based industries.

SEM V

Learn the structure function relationship of vision, audition, olfaction and gestation. Learn the location, function, disorders of all endocrine glands of human and other mammals. Learn statistical application in biological sciences. Can able to validate the experiment with testing hypothesis. Learn bacteriology, virology, antibiotics, immune system, immunity, abnormal immunity. Learn how to humanizing work and work environment. Can evaluate occupational stresses and apply ergonomic intervention to alleviate the stress. Learn sports science with respect to sports nutrition, metabolism, training, detraining, and sports injury.

SEM VI

Learn mammalian reproductive system, their endocrine role in reproductive life. Understand disorders of reproductive system. Learn structure function of different parts of excretory system, their endocrine and nonendocrine role in detoxification of human body. Also learn non excretory functions of kidney. Learn different aspects food and nutrition, estimation of energy requirement, preparation of balanced diet chart for normal and under treatment human beings. Can able to assess nutritional status of an individual or a family. Learn cytogenetic and molecular aspects of gene, genetic engineering. Understand principles of pharmacology, toxicology, drug, drug response relationship and effect of drugs on human health. Learn the fundamental principles of nanoscience and nanotechnology, nanostructure and its application in medical science. Understand bioinformatics as a sub discipline of biology and computer science concerned with the acquisition, storage, analysis, and dissemination of biological data.

Course Specific Outcome:

Course Title Course Specific Learning Outcome

CC: PHSL1011 (Cellular basis of Physiology)

Learn about the contribution of Indian Scientists and Physiologists in the field of Physiology and Medicine. Know about the fluid compartments in human body and the relation between organ, tissue and cells. Know about morphology of cells, structure and functions of different cell organelles in eukaryotic cells. Learn about different ion channels, ionophores, etc. and cellular transport systems. Analytical study on intracellular communication and different cell junctions and cell adhesion molecules. Learn about the cellular components related to cell division – Mitosis and Meiosis. Apply their knowledge about cell biology to understand changes in cell function. This core course includes cellular ageing and its characteristics, Apoptosis- Programmed cell death. Homeostasis in Physiological environment is



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also learnt. Studies about the histological structures of different mammalian tissues and organs through permanent slide in practical classes. They also learn hematological techniques through their practical classes.

CC: PHSL 1051 SEC (Hematological Techniques) Practical

Students are able to learn about the processes, principles, calculations and techniques of various parameters of blood like preparation and staining of blood film, identification of blood corpuscles, differential count of WBC, total count of RBC and WBC, bleeding time, clotting time, hemoglobin estimation, blood group determination etc.

CC: PHSL2011 (Circulating Body Fluids)

Students will come to know about two main fluid component presents in our body, i.e., blood and lymph. Blood volume, its normal range, its regulation and determination by different methods. Different types of White Blood Cell (WBC) present in blood, their normal range, their role in body defence, total count and differential count study to diagnose infection. Role of platelets and clotting factors proteins in blood coagulation. Structure, functions and fate of Red Blood Cell (RBC). Structure, biosynthesis and functions of Hemoglobin, learn practically to estimate hemoglobin. Concept of fetalhemoglobin, abnormal hemoglobin in Sickle cell anemia and thalassemia, anemia and its different types. Knowledge on blood groups types, precautionary measures required to carry out blood transfusion. Plasma proteins, their normal range, origin and functions. Lymph and tissue fluid formation, circulation their functions and fate, structure and functions of lymphatic organs like lymph gland and spleen.

CC: PHSL2051 SEC-2 (Clinical Biochemistry) Practical

They develop ideas about principle and application of colorimeter and spectrophotometer. They learn about pathophysiological significance of blood parameters like blood glucose, serum protein, albumin, urea, creatinine, uric acid, bilirubin and ketone bodies. They know about alteration of lipid and thyroid profile in human health and disease. They acquire knowledge about pathological significance of some enzymes and proteins such as lactate dehydrogenase glucose-6-phosphate dehydrogenase, creatine kinase, amylase, lipase etc.

CC5: Circulating Body Fluids (CBCS)

Students will come to know about two main fluid component presents in our body, i.e., blood and lymph. Blood volume, its normal range, its regulated and determination by different methods

Different types of White Blood Cell (WBC) present in blood, their normal range, their role in body defence, total count and differential count study to diagnose infection. Role of platelets and clotting factors proteins in blood coagulation. Structure, functions and fate of Red Blood Cell (RBC). Structure, biosynthesis and functions of Hemoglobin, learn practically to estimate Hb. Concept of fetalhemoglobin, abnormal hemoglobin in Sickle cell anemia and thalassemia, anemia and its different types. Knowledge on blood groups types, precautionary measures required to carry out blood transfusion. Plasma proteins, their normal range, origin and functions

Lymph and tissue fluid formation, circulation their functions and fate, structure and functions of lymphatic organs like lymph gland and spleen.

CC6: Circulation

Learn the mechanism of development and propagation of action potential in cardiac muscle. Electrocardiogram, electrocardiographic leads, mean electrical axis of heart, normal cardiac rate and cardiac arrhythmia due to myocardial infarctions and hypertrophy through ECG findings. Learn about the structure of heart, properties of cardiac muscle, events of cardiac cycle along with heart sounds and a brief idea about cardiac output. Morphology of arteries, veins, capillaries and circulation through these blood vessels, dynamics of blood flow within our body. Role of vasomotor centre, baroreceptors, chemoreceptors and hormones in regulating the homeostasis of cardiovascular system. Blood pressure, its measurement, factors affecting it and its regulation Heart failure and stroke – causes and management Regional circulation through brain, heart, spleen, skin, placenta and fetus.

CC7: Functions of the Nervous System

Students will come to know about reflexes – types and general properties. Tracts – both ascending and descending tracts, their origin, course, termination and functions. Students will get to know how we receive sensations (touch, pain, temperature, kinaesthetic and other sensations) and react to them accordingly through motor responses Functions of Spinal Cord with reference to functional changes following hemisection and complete section. Physiology of pain and



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its regulation, physiological basis of sleep and wakefulness, role of reticular system in arousal, EEG, its physiological basis and its role in consciousness and sleep, interpretation of abnormal EEG pattern, involvement of Basal ganglia and Cerebellum in maintenance of body posture and movement, movement disorders, decerebrate rigidity, decorticate rigidity, postural reflexes and its regulation. Organization and chemical transmission within autonomic nervous system. Role of Medulla Oblongata and Hypothalamus in various visceral functions. Role of limbic system in behavior and emotions. Physiology of learning and memory, disorders related to these cognitive functions.

CC8: Energy balance, metabolism and nutrition

They learn about the function of specific anabolic and catabolic pathways. The interrelation between carbohydrate, lipid and protein metabolism. Understand the molecular basis of control of metabolism. Learn how reactive oxygen species are formed and the role of catalase, superoxide dismutase, glutathione peroxidase and glutathione reductase in combating oxidative stress. Explain elements of nutrition. Understand the role of dietary fibers in several aspects in human body. They will learn about the functions, mode of action of various types of vitamins. They understand the physiological functions of minerals in human body. Students will learn various methods and techniques for quantitative estimation of carbohydrates (glucose, sucrose, lactose) and amino-nitrogen from practical.

CC9: Gastrointestinal function

Learn the anatomy and histology of alimentary canal, movements of alimentary canal and their regulations. Understand the digestion and absorptions of various food stuffs such as carbohydrates, protein, lipid, nucleic acid, vitamin, minerals and also water and electrolytes. Describe the major anatomical characteristics of the enteric nervous system. They understand about the histological structure of digestive glands and they also know about the composition, function and regulation of secretion of digestive juices. Describe the synthesis and secretion of bile acids, bile salts, enterohepatic circulation of bile, composition of liver bile and gall bladder bile. They know about the basic concepts of jaundice, peptic ulcer, gall stone and cholelithiasis. Identify the cell type and anatomical location of the endocrine cells secreting major GI hormones such as gastrin, secretin, cholecystokinin etc. Students practically learn the effects of hypoxia, acetyl choline and adrenaline on normal intestinal movements.

CC10: Respiration

Learn the anatomy, functions of the respiratory system and the mechanism of breathing. Outline the mechanism of oxygen and carbon dioxide transport in the blood. Demonstrate how breathing is chemically and nervously regulated. Understand about the various types of hypoxia and various respiratory abnormalities and diseases. Know how increased and decreased barometric pressure affects physiological systems in human body. Discuss the compensatory changes at moderately high altitude (acclimatization) and mountain sickness. Learn the various processes and mechanisms of artificial respiration. Through practical courses students learn measurement of peak expiratory flow rate, measurement of oxygen saturation by pulse oximeter before and after exercise and measurement of forced expiratory volume in first second.

CC11: Special Senses

Understand the roles of generator potentials and depolarization in sensory neurons and receptor cells. Sensory organs of vision, audition, olfaction and gustation along with their perception in CNS. Understand receptive fields and basics of stimulus coding and processing.

CC12: Endocrinology

Classify hormones, properties of polypeptide and steroid hormones. Classification of receptors and their related hormones. Apprehend where the hormones are synthesized. Illustrate what kind of hormone is synthesized and released in what kind of endocrine gland. Understand the action and functions of hormones along with their disorders.

CC13: Reproduction

Know the key gross and microscopic components of the reproductive systems in several male and female mammalian species. Understand gametogenesis and the gametes, structure, function. Demonstrate knowledge of key principles of reproductive endocrinology including: a) biosynthesis and chemistry of the different classes of hormones, b) mechanisms of action of hormones. Process of fertilization leading to blastocyst formation, implantation, embryological



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processes of gastrulation. Understand the structure, function and development of placenta, the amnion and the umbilical cord.

CC14: Formation and Excretion of Urine

Learn the anatomy of structures in posterior abdominal wall in relation to kidneys, ureter, blood supply and venous drainage of kidneys. Understand the structure, functions and regulations of nephrons and tubules and their role in urine formation, acid base balance along with other non-excretory functions. Be able to list at least 4 important inorganic ions the concentrations of which the kidneys help regulate, 3 important organic wastes that are eliminated by the kidney and at least 2 hormones normally produced by the kidney. Understand the concept of renal clearance and be able to perform clearance calculations and to interpret the results. Be able to explain the mechanisms by which the kidneys regulated the volume and composition of the extracellular fluid, the causes of ADH (vasopressin), aldosterone, renin-angiotensin and atrial natriuretic hormone release. Learn the systemic effects of ADH (vasopressin), aldosterone, renin-angiotensin and atrial natriuretic hormone release, the specific sites of ADH (vasopressin), aldosterone, renin-angiotensin and atrial natriuretic hormone release. Effects of sympathetic activity on renal function.

DSE1A: Biological Statistics

Principal concept of statistics, its subject and its relation with the other sciences. Learn how to Collect data relating to variable/variables which will be examined and calculate descriptive statistics from these data. Identify convenient sample by using sampling theory. Interpret data and identify distribution form relating to the variable/variables. Recognize location and dispersion statistics. Define and apply hypothesis testing via some of the statistical distributions and make a statistical decision.

DSE1B: Microbiology And Immunology

Learn multiple microbiology disciplines the core theories and practices along with the processes used by microorganisms for their replication, survival, and interaction with their environment, hosts, and host population. Understand the theoretical basis of the tools, technologies and methods common to microbiology along with practical skill in use of them. Learn the basic structure of immune system and realizes its importance. Learn antigen recognition and presenting Learn structure, of antibody and classes of antibody. Learn the basic functions of immunity of humoral and cellular types and also the functions of the immune system abnormally, hypersensitivity reactions and the basic mechanisms of autoimmune reactions. Learn the basic mechanism of antigen antibody reactions, immune technique, methods of protection against infectious diseases.

DSE2A: Ergonomics And Occupational Physiology

Learn the basic concept of ergonomics and its importance in occupational health. Understand the impact of work environment in health. Learn the study of work rest cycle, WRMSD and other occupational problems on evaluation of work related stress. Will learn the anthropometry and its role in design. Learn about the industrial safety to minimize accident and injury.

DSE2B: Sports And Exercise Physiology

Demonstrate knowledge of general overall physiological principles associated with metabolic processes; musculoskeletal system; cardiovascular system; aerobic and anaerobic program design. Will learn cardiorespiratory response during exercise. Understand oxygen debt and its relation with post exercise recovery. Able to demonstrate the maximum aerobic capacity and its importance in excise physiology. Will understand how training improves exercise efficiency.

Will learn sports injury and its management, sports rehabilitation and sports medicine.

DSE3A: Human Nutrition And Dietetics

Will learn different components food and their importance in daily life. Understand what an adequate and well-balanced diet is. Will Examine the several concepts and elements of nutrition.

Interpret and apply nutrition concepts to evaluate and improve the nutritional health of individuals with medical condition. Make samples of menu planning suitable for the elderly people, growing child, adult man and woman, pregnant woman and lactating woman. Will learn physiology of starvation, obesity, space nutrition etc.

DSE3B: Genetics And Molecular Biology



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Learn Mendelian concept in genetics and its extension in context of plants and animals. Will learn bacterial genetics and its role in genetic change. Understand and appreciate the diversity of life as it evolved over time by processes of mutation, selection and genetic change. Understand the human cytogenetic and its role in karyotype, medical science, sex determination. Will learn about the structure-function of chromosome, gene, DNA, RNA etc. Get a basic idea on genetic engineering and its role in GM plants, animals and crops. Learn some modern techniques applicable in molecular biology.

DSE4A: Toxicology

Learn and understand basic terms and principles of pharmacology with special reference to pharmacodynamics, pharmacokinetics and pharmacogenetics. Understand the basic principles of toxicology with emphasis on toxic chemicals pollutants and basic drug over dosage scenarios. Know the theories and principles and factors influencing drug action Know effects of toxicants and environmental pollutants toxicants on organ system and drug disposition. Know the mechanism of action, disposition, side effects, drug-drug interactions, contraindication of the drugs. Know dose response relationship and how to plot dose response curves.

DSE4B: Nano- Biotechnology And Bioinformatics

Learn the fundamental principles of nanoscience and their application to biomedical engineering.

Understand nanostructures, synthesis, properties, characterization techniques for nanomaterials using modern microscopy. Learn health threats with respect to toxicity of nanomaterials. Acquire knowledge and awareness of the basic principles and concepts of biology, computer science and mathematics. Use of existing software effectively to extract information from large databases and to use this information in computer modeling, problem-solving skills, including the ability to

develop new algorithms and analysis methods. Understanding of the intersection of life and information sciences, the core of shared concepts, language and skills the ability to speak the language of structure-function relationships, information theory, gene expression, and database queries.

SEC1A: Detection of Food Additives and Adulterants

From this SEC course, students will be able to identify: the food adulterants like Metanil yellow, Rhodamin B, Saccharin, Monosodium glutamate, Aluminium foil, Chicory, Bisphenol A and Bisphenol S, Chocolate Brown HT, Margarine, Pb, Hg, As, PCB, Dioxin etc if present in the food stuffs like turmeric powder, besan, laddoo, noodles, chocolate and amrita.

SEC1B: Histopathological Techniques

From this SEC course, students will be able to: prepare tissue sections from various organs and identify the sections after staining them with hematoxylin and eosin prepare bone marrow smear, stain and measure the diameter of megakaryocyte Stain reticulocyte and collagen present in tissues.

SEC2A: Clinical Biochemistry

Students practically learn photo-colorimetric estimation of blood constitutions. Measurement of blood glucose and blood inorganic phosphate. Measurement of serum total protein and determination of albumin-globulin ratio, determination of blood amylase.

SEC2B: Hematological techniques

After completion of the skill enhancement elective course, students must be expertise in the hematological techniques. Students will have ability to prepare blood smear and identify the blood cells. They will practically measure and determine hematocrit, MCV, MCHC, bleeding time, clotting time, hemoglobin etc.



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2023-2024

Department of Physiology

Program Specific Outcome and Course Specific Outcome

Suri Vidyasagar College (Govt. Sponsored)

Suri, Birbhum. PIN- 731101, West Bengal

(Affiliated to the University of Burdwan &

Accredited by NAAC B++)

Physiology Minor/ General/ Generic:

Programme specific outcome:

Semester Program Specific Outcome (Semester Specific)

SEM-I

Learn about the contribution of Indian Scientists and Physiologists in the field of Physiology and Medicine. Know about the fluid compartments in human body and the relation between organ, tissue and cells. Know about morphology of cells, structure and functions of different cell organelles in eukaryotic cells. Learn about different ion channels, ionophores, etc. and cellular transport systems. Analytical study on intracellular communication and different cell junctions and cell adhesion molecules. Learn about the cellular components related to cell division – Mitosis and Meiosis. Apply their knowledge about cell biology to understand changes in cell function. This core course includes cellular Ageing and its characteristics, Apoptosis- Programmed cell death. Homeostasis in Physiological environment is also learnt. Studies about the histological structures of different mammalian tissues and organs through permanent slide in practical classes. They also learn hematological techniques through their practical classes.

SEM-II

Students will come to know about two main fluid component presents in our body, i.e., blood and lymph. Blood volume, its normal range, its regulated and determination by different methods. Different types of White Blood Cell (WBC) present in blood, their normal range, their role in body defence, total count and differential count study to diagnose infection. Role of platelets and clotting factors proteins in blood coagulation. Structure, functions and fate of Red Blood Cell (RBC). Structure, biosynthesis and functions of Hemoglobin, learn practically to estimate hemoglobin. Concept of fetal hemoglobin, abnormal hemoglobin in Sickle cell anemia and thalassemia, anemia and its different types. Knowledge on blood groups types, precautionary measures required to carry out blood transfusion. Plasma proteins, their normal range, origin and functions. Lymph and tissue fluid formation, circulation their functions and fate, structure and functions of lymphatic organs like lymph gland and spleen.

SEM-III



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Students after studying SEM III, get knowledge on properties and functions of blood and lymph, pursue idea on features of heart, systematic and regional circulation and respiratory physiology. After studying all these courses in detail most of the students go for the post-graduation and higher studies. Learn application of statistics in biological sciences and also different aspects of pharmacology and pharmacokinetics.

SEM-IV

Learn structure function of different parts of excretory system, their endocrine and non-endocrine role in detoxification of human body. Also learn non excretory functions of kidney. Learn the location, function, disorders of all endocrine glands of human and other mammals. Learn structure of skin and regulation of body temperature. Will learn different aspects of molecular biology and social physiology.

SEM-V Students successfully acquires both theoretical and practical knowledge on Nerve and Muscle physiology. Get idea about ascending and descending tracts, physiology of pain, role of basal ganglia and cerebellum in controlling posture and movement, functions of higher centers of brain. Also able to acquire knowledge on microbes and immunity functions.

SEM-VI Learn mammalian reproductive system, their endocrine role in reproductive life. Understand disorders of reproductive system. Learn the structure function relationship of vision, audition, olfaction and gestation. Learn physiology of work and work environment and also the impacts of different pollutants on human body.

Course Specific Outcome:

Course Title Course Specific Learning Outcome

PHSL1021(Cellular Basis of Physiology)

Learn about the contribution of Indian Scientists and Physiologists in the field of Physiology and Medicine. Know about the fluid compartments in human body and the relation between organ, tissue and cells. Know about morphology of cells, structure and functions of different cell organelles in eukaryotic cells. Learn about different ion channels, ionophores, etc. and cellular transport systems. Analytical study on intracellular communication and different cell junctions and cell adhesion molecules. Learn about the cellular components related to cell division – Mitosis and Meiosis. Apply their knowledge about cell biology to understand changes in cell function. This core course includes cellular Ageing and its characteristics, Apoptosis- Programmed cell death. Homeostasis in Physiological environment is also learnt. Studies about the histological structures of different mammalian tissues and organs through permanent slide in practical classes. They also learn hematological techniques through their practical classes.

PHSL2021(Circulating Body Fluids)

Students will come to know about two main fluid component presents in our body, i.e., blood and lymph. Blood volume, its normal range, its regulated and determination by different methods. Different types of White Blood Cell (WBC) present in blood, their normal range, their role in body defence, total count and differential count study to diagnose infection. Role of platelets and clotting factors proteins in blood coagulation. Structure, functions and fate of Red Blood Cell (RBC). Structure, biosynthesis and functions of Hemoglobin, learn practically to estimate hemoglobin. Concept of fetalhemoglobin, abnormal hemoglobin in Sickle cell anemia and thalassemia, anemia and its different types. Knowledge on blood groups types, precautionary measures required to carry out blood transfusion. Plasma proteins, their normal range, origin and functions. Lymph and tissue fluid formation, circulation their functions and fate, structure and functions of lymphatic organs like lymph gland and spleen.



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CC-1C/GE3 (CBCS):

- a) Respiratory System
- b) Cardiovascular System
- c) Blood and Body Fluids

Learn the anatomy, functions of the respiratory system and the mechanism of breathing. Understand how gaseous exchange takes place between the lung and blood. Will learn about lung volume and capacities. Learn breathing mechanism-regulations, O₂, CO₂ transport. Learn about the structure of heart, properties of cardiac muscle, events of cardiac cycle along with heart sounds, cardiac output. Morphology of arteries, veins, capillaries. Blood pressure and its regulations, Peculiarities of regional circulation. Students will come to know about blood constituents, plasma proteins its functions, blood volume. Also learn process of erythropoiesis and leucopoiesis. Learn biosynthesis and functions and estimation of Hemoglobin, concept of abnormal hemoglobin in Sickle cell anemia and thalassemia and different types of anemia. Role of clotting factors proteins in blood coagulation, knowledge on blood groups. Learn lymph, lymph glands and tissue fluids.

CC-1D/GE4:

- a) Endocrine system
- b) Renal Physiology
- c) Skin and Regulation of Body Temperature

Learn hormones, hormonal receptors, their functions, biosynthesis and classifications. Learn hormonal disorders. Learn the anatomy of kidney, nephron and their functional aspects. Be able to list normal and abnormal constituents of urine. Be able to explain the mechanisms of urine storage and micturition. Know about the structure and function of skin and understand the role of skin in the mechanism of regulation of body temperature.

DSE-1A:

- a) Muscle and Nerve Physiology
- b) Nervous System

Learn morphology and properties of skeletal muscle. Learn about the structure- function of synaptic and NM junction. Know about neuron, generation of impulse and conduction through different types of neurons, properties of nerves. Students will come to know about reflexes – types and general properties. Tracts – both ascending/ sensory and descending/ motor tracts and their functions. Functions of Spinal Cord with reference to functional changes following hemisection and complete section. Physiology of pain and its regulation, cerebellum in maintenance of body posture and movement. Role of thalamus and Hypothalamus in various visceral functions. Organization an chemical transmission within autonomic nervous system. They have a brief idea of speech and physiology of learning and memory, disorders related to these cognitive functions.

DSE-1B:

- a) Reproductive Physiology
- b) Sensory Physiology

Learn about gross and microscopic structure of gonads and their functions. Learn functions of gonads- gametogenesis. Demonstrate knowledge of menstrual cycle and their hormonal control, process of fertilization, gastrulation. Learn about development of mammary gland and lactation. Understand the structure, function of placenta. Get to know in details about receptors as bio transducers, understand the roles of generator potentials and depolarization in sensory neurons and receptor cells. Sensory organs of vision, audition, olfaction and gustation along with their perception in CNS. Understand receptive fields and basics of stimulus coding and processing.

SEC-IA:

Pharmacology

Describe the basic scientific concepts and principles that serve as the foundational underpinnings of the pharmacological sciences including pharmacokinetics; pharmacodynamics; drug metabolism; and drug-drug interactions; and explain how these fundamental pharmacological properties can influence route of administration, drug



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action; drug efficacy and potency; drug levels in the body; potential for drug interactions; drug toxicity; and the appropriate choice of drug for pharmacotherapy in a given patient.

SEC-IB: Bio-Statistics

Principal concept of statistics, its subject and its relation with the other sciences. Learn how to Collect data relating to variable/variables which will be examined and calculate descriptive statistics from these data. Identify convenient sample by using sampling theory. Interpret data and identify distribution form relating to the variable/variables. Recognize location and dispersion statistics. Define and apply hypothesis testing via some of the statistical distributions and make a statistical decision.

SEC-IIA:

Molecular Biology

Will learn about the structure-function of chromosome, gene, DNA, RNA etc. Get a basic idea of genetic engineering

SEC-IIB: Social Physiology

Apply best practices in developing, implementing, assessing, and evaluating programs and interventions related to health promotion, physical activity adoption and adherence, and the prevention and treatment of diseases. Understand what an adequate and well-balanced diet is. Examine the several concepts of nutrition. Explain elements of nutrition. List rules of adequate and balanced diet. Learn the physical and social changes taking place during the elderly period of life.

SEC-IIIA: Microbiology

Learn multiple microbiology disciplines the core theories and practices along with the processes used by microorganisms for their replication, survival, and interaction with their environment, hosts, and host population. Understand the theoretical basis of the tools, technologies and methods common to microbiology along with practical skill in use of them.

SEC-IIIB: Immunology

Learn the basic structure of immune system and realizes its importance. Learn structure, of antibody and classes of antibody. Learn the basic functions of immunity of humoral and cellular types.

SEC-IVA: Work Physiology

Will able to understand the concept and classification of physical work. Will learn cardiorespiratory response during exercise. Understand oxygen debt and its relation with post exercise recovery. Basic idea of doping, anthropometry and its uses.

SEC-IVB: Environmental Physiology

Will know environment in its physiological aspects. Know sources of various pollutants and their effect on human body. Learn about noise pollution and its preventive measure.



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Department of plant protection

Programme outcomes (POs), Course Outcome (COs)

Course Introduction

The new curriculum of B.Sc. Plant Protection presents a comprehensive view of basic knowledge, technical skill and diversity of applications focusing on protection of plants from diseases. The approach and the content of the syllabus encompass practical combination of core, elective and vocational papers with judicious mix of interdisciplinary components. Students of this subject would get adequate exposure to both basic concept of the subject along with upcoming state of art technologies in the concerned field. The contents are made with care to make the students socially aware, economically concerned and environmentally sensitive, in the context of national scenario. Students will also learn and practise knowledge about ecosystem, life processes and environment friendly approach to crop protection and disease management. As a result, they are expected to acquire comprehensive knowledge on plant protection in relation to current agro-climatic traits.

Programme outcomes (POS):

This modern curriculum would transform the psyche of the students to more goal oriented discovery seeking persons equipped with practical skills with adequate theoretical bases. The students would become updated with various pedagogical trends like e-learning, hybrid learning in the context of this subject. Some prominent programme outcomes are highlighted below:

- 1) Shall develop students with proficiency in plant protection
- 2) Students can employ and implement their acquired knowledge in basic and applied aspects of plant protection.
- 3) Will help to enhance students ability of in-depth thinking, development of scientific attitude, management of problems and generating solutions



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SEMESTER-I

Course Objectives:

Major

Pest and
Vectors-I

- Exploring the historical aspect and current and modern applications of plant protection to obtain a comprehensive view of the subject and working principle, in general.
- Detailed understanding of plant protection in diverse field of applications like food production, crop security, crop germplasm preservation, pest and pathogen management, green pesticides, green fertilizers practises.

Minor

Pest and
Vectors-I

- Exploring the historical aspect and current and modern applications of plant protection to obtain a comprehensive view of the subject and working principle, in general.
- Detailed understanding of plant protection in diverse field of applications like food production, crop security, crop germplasm preservation, pest and pathogen management, green pesticides, green fertilizers practises.

Multidisciplinary

Vermiculture

- Development of concepts on vermiculture and its uses
- Knowledge on vermicomposting, its preparation and application in organic farming



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SEC

Green
pesticide

- Development of general idea about plant pest, pesticides and their significance
- Preparation, mode of action and utilization of green pesticide



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SEMESTER-II

Course Objectives:

- Basic idea about pest mediated damage and their management
- Idea on dissemination of plant pathogen, knowledge on transmission and epidemiology of different types of plant diseases

Minor

- Basic idea about pest mediated damage and their management
- Idea on dissemination of plant pathogen, knowledge on transmission and epidemiology of different types of plant diseases

Multidisciplinary

Pesticide application

equipments

- Development of basic idea on pesticides and their applications
- Introduction to equipments, pesticide management, their handling techniques and formulation of pesticides



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SEC

Pests survey and surveillance

- Development of preliminary ideas about pest survey and surveillance
- Introduction to detailed ideas on various survey methods, pest sampling techniques and pest infested injury to crops

SEMESTER-III

Course objectives:

Major

Biological control

Plant growth promoting microorganism

- Practical knowledge on insect pests of crop and their bio-control agents.
- Students get knowledge on nitrogen fixing and phosphate solubilizing microorganisms residing in rhizosphere that promote the growth of crop plants for sustainable agriculture.

Multidisciplinary/Interdisciplinary

Seed Pathology and Seed Treatment

- Students get knowledge about seed pathology.
- Students get knowledge about seed borne diseases and role of seed treatment in agriculture.

Skill Enhancement Course (SEC):

Remote sensing technique in plant protection

- Knowledge on remote sensing technique in Plant Protection



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Course outcomes:

Major

Biological control

Plant growth promoting microorganism

- Students will gain knowledge on the fundamental concepts on bio-control agents, predators and parasitoids, plant parasitic nematodes, principle and methods of Biological control, biopesticides, mass culture and release of parasitoides and predators, and biological control of plant diseases.
- Students will be benefitted with the detailed knowledge on theoretical and practical aspects of plant growth promoting microorganisms (PGPM) and their traits, application of PGPM and biofertilizer.
- Students will receive hands-on training and practical knowledge for understanding the symptoms of attack by type pests and disease of plants, identification of common Insects, fungi and other pests, diseases of major crops after successful completion of the course.

Multidisciplinary/Interdisciplinary

Seed Pathology and Seed Treatment

- Students will gain detailed knowledge about seed pathology, seed borne pathogens, deterioration of seeds and grains by microbial invasion and their effects on seed quality, toxins, seed dressing and treatment.

Skill Enhancement Course (SEC):

Remote sensing technique in plant protection

- Students will get exposure to study and gain knowledge about the principle of Geographical Information Science (GIS) and Remote Sensing (RS) in the context of plant protection.



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- Students will gain knowledge about the components and types of RS, application of GIS and RS in forestry and agriculture, methods of collection data and some case studies related to RS.

SEMESTER-IV

Course objectives:

Major

Integrated Pest

Management(IPM)

Biotechnology in

Plant Protection

Bionomics of Insect Pest, Plant Disease and their Management of major crops

- Students get knowledge about ETL, EIL, Principles of pest Management.
- Knowledge on cultural, physical, mechanical, chemical, biological management of insect pest, diseases and weeds of agricultural crop.
- Role of bio-control agent in agricultural pest management.

Minor

Formulation and Application of Pesticide and their

precautions

- Knowledge on different types of pesticide formulation.
- Students get knowledge about precaution during storage of pesticide, formulation of pesticides and after application of pesticides.



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Course outcomes:

Major

Integrated Pest

Management (IPM)

Biotechnology in

Plant Protection

Bionomics of Insect Pest, Plant Disease and their Management of major

crops

- Students will be benefited with the detailed theoretical knowledge on the concepts and components of Integrated Disease Management (IDM) and the factors controlling IDM.
- Students will gain detailed theoretical knowledge on plant biotechnology and plant protection, plant genetic engineering for resistance to plant pathogens, bio-control of plant pathogens, and detection tools for plant infection.
- Students will gain detailed practical knowledge about symptoms of attack by pests and disease of plants, study and identification of symptoms under the field conditions and various physiological aspects of pathogenic infection in plants.

Minor

Formulation and Application of Pesticide and their

precautions

- Students will be benefited with the detailed theoretical knowledge about bionomics, management of major insect pest of some crops, predisposition and epidemiological factors, study of major disease cycles and their management.

Department Zoology

Programmes Outcomes (POs) and Course Outcomes (COs)



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Semester I

ZOOL1011: Non-Chordates (Major/DS Core)

- **Objectives:**

1. Introduce the diversity of invertebrates, their classification, and physiology.
2. Explore adaptive mechanisms in non-chordates.
3. Provide an understanding of evolutionary relationships among invertebrates.

- **Outcomes:**

1. Systematic classification of non-chordates.
2. Comprehension of invertebrate biology and their ecological roles.
3. Skills to identify non-chordates and their evolutionary adaptations

ZOOL1021: Non-Chordates (Minor)

- **Objectives:**

1. Study the taxonomy and organ systems of invertebrates.
2. Gain knowledge of the physiology and adaptations in non-chordates.

- **Outcomes:**

1. Understanding of non-chordate systematics.
2. Identification and evolutionary analysis of species

ZOOL1031: Introduction to Animalia (Interdisciplinary)

- **Objectives:**

1. Build foundational knowledge of zoological principles.
2. Understand the classification and diagnostic features of animal taxa.
3. Introduce ecological interactions and population dynamics.

- **Outcomes:**

1. Familiarity with basic taxonomic principles and animal diversity.



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2. Ability to analyze ecological roles and adaptations in animals.

ZOOL1051: Apiculture (Skill Enhancement Course)

- **Objectives:**

1. Learn beekeeping techniques and honey production.
2. Understand the importance of apiculture as an industry.

- **Outcomes:**

1. Knowledge of honeybee management and disease control.
 2. Entrepreneurship skills in apiculture.
-

Semester II

ZOOL2011: Chordates (Major/DS Core)

- **Objectives:**

1. Explore the diversity and classification of chordates.
2. Understand their anatomy, physiology, and ecological roles.

- **Outcomes:**

1. Classification of chordates and their adaptive traits.
2. Insight into chordate evolution and ecological significance

ZOOL2021: Chordates (Minor)

- **Objectives:**

1. Study vertebrate adaptations and taxonomic diversity.
2. Examine evolutionary concepts and chordate anatomy.

- **Outcomes:**

1. Proficiency in identifying vertebrates and understanding their roles.
2. Analytical skills for studying vertebrate ecology.

ZOOL2031: Applied Zoology I (Interdisciplinary)



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- **Objectives:**

1. Introduce economic aspects of zoology, focusing on fish culture, prawn culture, and vermiculture.
2. Provide hands-on knowledge of sustainable animal resource management.

- **Outcomes:**

1. Ability to manage aquaculture, vermiculture, and related systems.
 2. Skills to identify diseases and pests in aquaculture and vermiculture.
-

Semester III

ZOOL3011: Biochemistry (Major/DS Core)

- **Objectives:**

1. Understand biochemical principles that regulate biological systems.
2. Analyze molecular interactions and metabolic pathways.

- **Outcomes:**

1. Comprehension of biomolecular structures and reactions.
2. Analytical skills in biochemical applications.

ZOOL3021: Vertebrate Development (Minor)

- **Objectives:**

1. Explore embryological processes in vertebrates.
2. Understand the developmental stages and their significance.

- **Outcomes:**

1. Proficiency in understanding vertebrate embryology.
2. Insight into evolutionary aspects of development.

ZOOL3051: Medical Diagnostics (Skill Enhancement Course)

- **Objectives:**



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1. Provide knowledge of diagnostic tools for health assessment.
 2. Train students in basic clinical laboratory techniques.
- **Outcomes:**
 1. Skills in handling diagnostic tools and interpreting results.
 2. Understanding of medical conditions through diagnostics.
-

Semester IV

ZOOL4011: Animal Physiology (Major/DS Core)

- **Objectives:**
 1. Study the functions of organ systems in animals.
 2. Explore physiological adaptations and regulatory mechanisms.
- **Outcomes:**
 1. Knowledge of physiological processes in different taxa.
 2. Skills in analyzing organ system functions.

ZOOL4012: Disease Biology

- **Objectives:**
 1. Understand molecular and ecological aspects of diseases.
 2. Examine host-pathogen interactions and disease control methods.
- **Outcomes:**
 1. Knowledge of disease mechanisms and ecological impacts.
 2. Skills in identifying and managing diseases in biological systems.

ZOOL4021: Wildlife Conservation (Minor)

- **Objectives:**
 1. Introduce wildlife conservation strategies and management tools.
 2. Study ecological principles governing biodiversity.



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- **Outcomes:**

1. Skills in wildlife management and conservation planning.
 2. Knowledge of ecological dynamics and biodiversity protection.
-

Skill Enhancement Courses

1. **ZOOL2051: Sericulture**

- **Objectives:**

- Teach the process of silk production and mulberry cultivation.

- **Outcomes:**

2. Entrepreneurship in sericulture and understanding of silk production

ZOOL3051: Animal Husbandry and Management

- **Objectives:**

- Introduce the practices of livestock rearing and dairy production.

- **Outcomes:**

- Practical skills in managing livestock for economic benefits.
-
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Following is the pass percentage of the students in the final Examination of 2023-24:

Year	Program Code	Program Name	Number of students appeared in the final year examination	Number of students passed in final year examination
2023-24	MSZOO	M.Sc. In Zoology	4	0
	ARBH	B.A. Hons. in Arabic	19	12
	B.A. General	B.A. General	647	172
	BNGH	B.A. Hons. In Bengali	33	31
	ECOH	B.A. Hons. In Economics	2	0
	ENGH	B.A. Hons. in English	51	46
	GEOH	B.A. Hons. in Geography	8	8
	HISH	B.A. Hons. in History	43	34
	MCJH	B.A. Hons. in Mass Com.	19	16
	PHIH	B.A. Hons. in Philosophy	16	12
	PLSH	B.A. Hons. in Political Science	46	39
	SNSH	B.A. Hons. in Sanskrit	29	17
	ACYH	B.Com. Hons. In Accountancy	9	4
	Commerce	B.Com. General	6	3
	BOTH	B.Sc. Hons. In Botany	9	9
	CHEM	B.Sc. Hons. In Chemistry	3	3
	MTMH	B.Sc. Hons. In Mathematics	15	14
	MCBH	B.Sc. Hons. In Microbiology	8	7
	PHSH	B.Sc. Hons. In Physics	4	3
	PHYH	B.Sc. Hons. In Physiology	13	13
	Science Gen	B.Sc. General	23	19
	ZOOH	B.Sc. Hons. In Zoology	6	6



Jyoti Parichha

Principal
Suri Vidyasagar College
Suri, Birbhum

PRINCIPAL
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Sports Report (2023-2024)

In the session 2023-24 students have been participated in various sports programmes such as College annual sports meet, Inter college games and sports in district and state level under Education Directorate, Kolkata, a number of games activities organized by the Burdwan University and other organization.

5.3.1 Number of awards/medals for outstanding performance in sports/cultural activities at university/state/national / international level (award for a team event should be counted as one) during the year.

Summery Sheet

Academic Year	2023 - 2024
Total no of Sports Award (University/ State/National/International)	20

S L N O	Year	Award/ Medal/ Recognition for	Name of the award/ medal	Team / Indivi dual	Universi ty/State/ National / Internati onal	Sports / Cultur al	To whom the award given
1	2023 -24	Recognition for participating in the DPI sponsored state sports and games championship, held at Chandidas Mahavidyalaya, Khujitipara during 29/02/2024 to 01/03/2024	Secured Ist position in Athletics game (100 m Men)	Indivi dual	State	Sports	Sayan Dutta (Student of Suri Vidyasagar College)
2		Recognition for participating in the DPI sponsored state sports and games championship, held at Chandidas Mahavidyalaya,	Secured 3 rd position in Athletics game (200 m Men)	Indivi dual	State	Sports	Sayan Dutta (Student of Suri Vidyasagar College)



SURI VIDYASAGAR COLLEGE

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SURI, BIRBHUM, PIN – 731101, Ph. No. – 03462-255504

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		Khujitipara during 29/02/2024 to 01/03/2024					
3		Recognition for participating in the DPI sponsored state sports and games championship, held at Chandidas Mahavidyalaya, Khujitipara during 29/02/2024 to 01/03/2024	Secured 2 nd position in Athletics game (1500 m Women)	Indivi dual	State	Sports	Purnima Tudu (Student of Suri Vidyasagar College)
4		Recognition for participating in the DPI sponsored state sports and games championship, held at Chandidas Mahavidyalaya, Khujitipara during 29/02/2024 to 01/03/2024	Secured 3 rd position in Athletics game (800 m Women)	Indivi dual	State	Sports	Mandira Tudu (Student of Suri Vidyasagar College)
5		Recognition for participating in the DPI sponsored state sports and games championship, held at Chandidas Mahavidyalaya, Khujitipara during 29/02/2024 to 01/03/2024	Secured 3 rd position in Athletics game (400 m Women)	Indivi dual	State	Sports	Mandira Tudu (Student of Suri Vidyasagar College)
6		Recognition for participating in the DPI sponsored state sports and games championship, held at Chandidas Mahavidyalaya, Khujitipara during 29/02/2024 to 01/03/2024	Secured 1 st position in Athletics game (1500 m Women)	Indivi dual	State	Sports	Mandira Tudu (Student of Suri Vidyasagar College)
7		Recognition for participating in the DPI sponsored state sports and games championship, held at Chandidas Mahavidyalaya, Khujitipara during 29/02/2024 to 01/03/2024	Secured 1 st position in Shot put game	Indivi dual	State	Sports	Anjali Mondal (Student of Suri Vidyasagar College)
8		Recognition for participating in the DPI sponsored state sports and	Secured 3 rd position in	Indivi dual	State	Sports	Anjali Mondal (Student of Suri



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		games championship, held at Chandidas Mahavidyalaya, Khujitipara during 29/02/2024 to 01/03/2024	Discuss throw game				Vidyasagar College)
9		Recognition for participating in the DPI sponsored state sports and games championship, held at Chandidas Mahavidyalaya, Khujitipara during 29/02/2024 to 01/03/2024	Secured 2 nd position in Discus throw game	Individual	State	Sports	Sima Sharma (Student of Suri Vidyasagar College)
10		Recognition for participating in the DPI sponsored state sports and games championship, held at Chandidas Mahavidyalaya, Khujitipara during 29/02/2024 to 01/03/2024	Runners in Kho-Kho (Women) game	Team	State	Sports	Tuhina Khatun, Mandira Tudu, Papiya Murmu, Purnima Tudu, (Student of Suri Vidyasagar College)
11		Recognition for participating in the DPI sponsored state sports and games championship, held at Sport Authority of India, NSEC, Kolkata during 24/03/2024 to 27/03/2024	Participated in Athletics game	Individual	State	Sports	Soumi Ghosh (Student of Suri Vidyasagar College)
12		Recognition for participating in the DPI sponsored state sports and games championship, held at Sport Authority of India, NSEC, Kolkata during 24/03/2024 to 27/03/2024	Participated in Athletics game	Individual	State	Sports	Purnima Tudu (Student of Suri Vidyasagar College)
13		Recognition for participating in the DPI sponsored state sports and games championship, held at Sport Authority of India, NSEC, Kolkata during 24/03/2024 to 27/03/2024	Participated in Athletics game	Individual	State	Sports	Mandira Tudu (Student of Suri Vidyasagar College)



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14	Recognition for participating in the DPI sponsored state sports and games championship, held at Sport Authority of India, NSEC, Kolkata during 24/03/2024 to 27/03/2024	Participated in Athletics game	Individual	State	Sports	Anjali Mondal (Student of Suri Vidyasagar College)
15	Recognition for participating in the 2 nd world Yoga Championship 2023 held on Ghaziabad, Uttar pradesh on 16/12/2023	Secured Ist position in Yoga	Individual	National	Sports	Nisha Pal (Student of Suri Vidyasagar College)
16	Recognition for participating in the Inter-Collegiate KABADDI (Men) Tournament under the University of Burdwan held at Mohan bagan Ground on 27/04/2024	Runners in the Inter-Collegiate KABADDI (Men) Tournament	Team	University	Sport	Akash Bagdi, Akash Das, Abhijit Bagdi, Subhodeep Bhandari, Abdus Salam, Sk. Firoj, Sk. Injamam, Bishnu Charan Bagdi, Sachin Ojha Sk Ushaul Hossain (Student of Suri Vidyasagar College)
17	Secured GOLD position in the event of Khelo India Womens Pencak Silat League, on 26/08/2023 to 27/08/2023	Senior Class Open-II	Individual	National	Sports	Pommy Bhakat (Student of Suri Vidyasagar College)
18	Member of Runners up team Dipti Sangha Football Club held on 18/03/2024 to 18/04/2024	Kanyashree Football premier organized by The Indian Football Association (IFA), West Bengal.	Individual	National	Sports	Barsha Dalui (Student of Suri Vidyasagar College)



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19		Participation in the science model competition of West Bengal state student youth science fair 2023-24 held at yuvabharati krirangan, Kolkata on 08/02/24 to 09/02/24	Science model competition	Individual	National	Youth services/Sports	Akash Dan (Student of Suri Vidyasagar College)
20		Participation in the science model competition of West Bengal state student youth science fair 2023-24 held at yuvabharati krirangan, Kolkata on 08/02/24 to 09/02/24	Science model competition	Individual	National	Youth services/Sports	Anangsha Ghosh (Student of Suri Vidyasagar College)



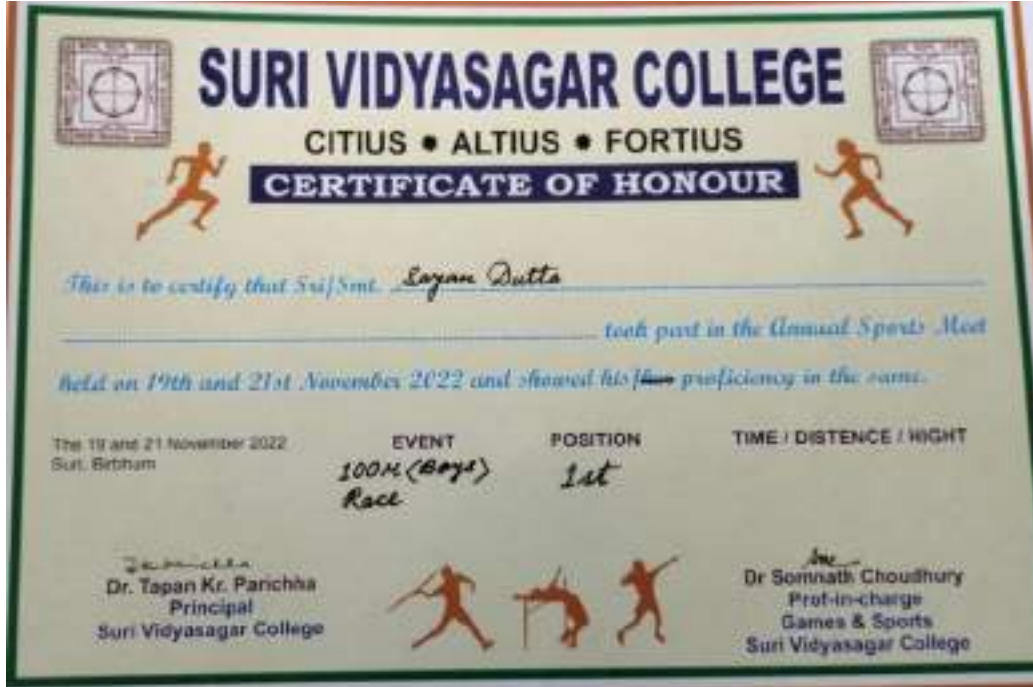
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The Inter college state sports and games championship (DPI) Sports held on 28/02/2024 to 29/02/2024 at Chandidas Mahavidyalaya, Birbhum. The sports events as Athletics (Men & Women), Football (Men), Kho-Kho (Women) were organized. The participants list and identities of each events are well documented. Award certificates of participants are attach following:



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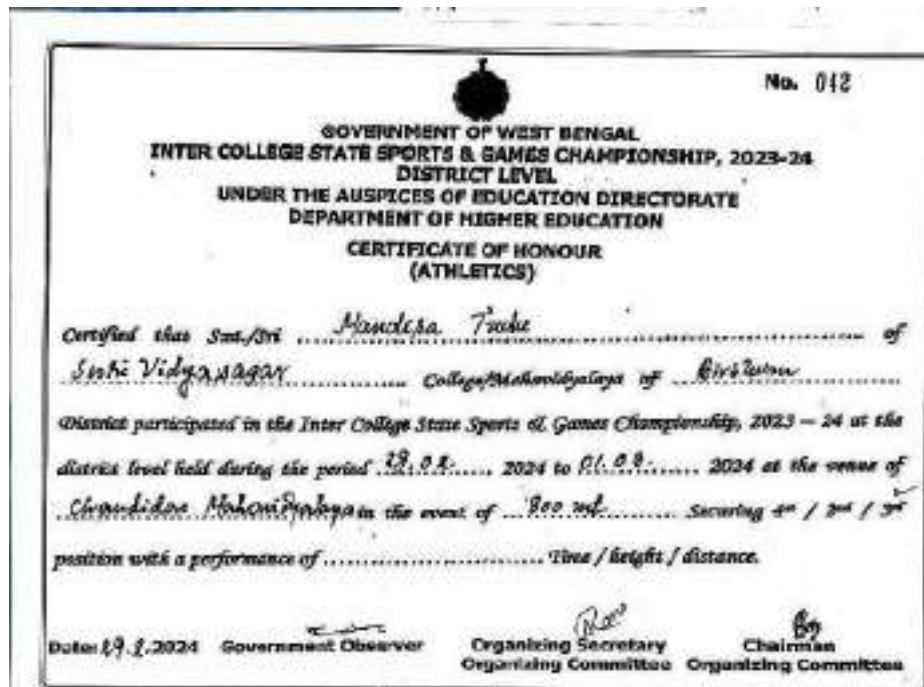
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The certificates of the secured position for different sport event are attached below.





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No. 011

**GOVERNMENT OF WEST BENGAL
INTER COLLEGE STATE SPORTS & GAMES CHAMPIONSHIP, 2023-24
DISTRICT LEVEL
UNDER THE AUSPICES OF EDUCATION DIRECTORATE
DEPARTMENT OF HIGHER EDUCATION
CERTIFICATE OF HONOUR
(ATHLETICS)**

Certified that Smt./Shri MANDIRA TUDU of
Suri Vidyasagar College College/Mahavidyalaya of Burdwan
District participated in the Inter College State Sports & Games Championship, 2023 – 24 at the
district level held during the period 29/02/ 2024 to 01/03/ 2024 at the venue of
Chandidas Mahavidyalaya in the event of 1500 Mts. Run/Women Securing 1st / 2nd / 3rd
position with a performance of Time / height / distance.

Date: 29/02/2024 Government Observer  Organizing Secretary  Chairman 
Organizing Committee Organizing Committee Organizing Committee

No. 019

**GOVERNMENT OF WEST BENGAL
INTER COLLEGE STATE SPORTS & GAMES CHAMPIONSHIP, 2023-24
DISTRICT LEVEL
UNDER THE AUSPICES OF EDUCATION DIRECTORATE
DEPARTMENT OF HIGHER EDUCATION
CERTIFICATE OF HONOUR
(ATHLETICS)**

Certified that Smt./Shri Mandira Tudu of
Suri Vidyasagar College/Mahavidyalaya of Burdwan
District participated in the Inter College State Sports & Games Championship, 2023 – 24 at the
district level held during the period 29.02. 2024 to 01.03. 2024 at the venue of
Chandidas Mahavidyalaya in the event of 400 ml. Sprint Securing 1st / 2nd / 3rd
position with a performance of Time / height / distance.

Date: 29.2.2024 Government Observer  Organizing Secretary  Chairman 
Organizing Committee Organizing Committee Organizing Committee



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No. 052

**GOVERNMENT OF WEST BENGAL
INTER COLLEGE STATE SPORTS & GAMES CHAMPIONSHIP, 2023-24
DISTRICT LEVEL
UNDER THE AUSPICES OF EDUCATION DIRECTORATE
DEPARTMENT OF HIGHER EDUCATION
CERTIFICATE OF HONOUR
(ATHLETICS)**

Certified that Smt./Sri Anjali Mondal of
Suri Vidyasagar College/Mahavidyalaya of Birbhum
District participated in the Inter College State Sports & Games Championship, 2023 – 24 at the
district level held during the period 29.2 2024 to 01.03 2024 at the venue of
Chandidas Mahavidyalaya in the event of 100m (Women) Securing 1st / 2nd / 3rd
position with a performance of 12.05 mt Time / height / distance.

Date: 29.2.2024 Government Observer [Signature] Organizing Secretary
Organizing Committee [Signature] Chairman
Organizing Committee

No. 024

**GOVERNMENT OF WEST BENGAL
INTER COLLEGE STATE SPORTS & GAMES CHAMPIONSHIP, 2023-24
DISTRICT LEVEL
UNDER THE AUSPICES OF EDUCATION DIRECTORATE
DEPARTMENT OF HIGHER EDUCATION
CERTIFICATE OF HONOUR
(ATHLETICS)**

Certified that Smt./Sri Anjali Mondal of
Suri Vidyasagar College/Mahavidyalaya of Birbhum
District participated in the Inter College State Sports & Games Championship, 2023 – 24 at the
district level held during the period 29/02 2024 to 01/03 2024 at the venue of
Chandidas Mahavidyalaya in the event of 100m (Women) Securing 4th / 2nd / 3rd
position with a performance of 18.70 m. Time / height / distance.

Date: 29/02/2024 Government Observer [Signature] Organizing Secretary
Organizing Committee [Signature] Chairman
Organizing Committee



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No. 023

GOVERNMENT OF WEST BENGAL
INTER COLLEGE STATE SPORTS & GAMES CHAMPIONSHIP, 2023-24
DISTRICT LEVEL
UNDER THE AUSPICES OF EDUCATION DIRECTORATE
DEPARTMENT OF HIGHER EDUCATION
CERTIFICATE OF HONOUR
(ATHLETICS)

Certified that Smt./Sri Sima Sharma of Suri Vidyasagar College/Mahavidyalaya of Birbhum District participated in the Inter College State Sports & Games Championship, 2023 – 24 at the district level held during the period 29.02 2024 to 01.03 2024 at the venue of Chandidas Mahavidyalaya in the event of Discus Throw (Wm). Securing 1st / 2nd / 3rd position with a performance of 26.15 m. Time / height / distance.

Date: 29/03/2024 Government Observer [Signature] Organizing Secretary [Signature] Chairman [Signature]
 Organizing Committee Organizing Committee

No. 014

GOVERNMENT OF WEST BENGAL
INTER COLLEGE STATE SPORTS & GAMES CHAMPIONSHIP, 2023-24
DISTRICT LEVEL
UNDER THE AUSPICES OF EDUCATION DIRECTORATE
DEPARTMENT OF HIGHER EDUCATION
CERTIFICATE OF HONOUR
(FOOTBALL / KHO KHO)

Certified that Smt./Sri TUHINA KHATUN of Suri Vidyasagar College/Mahavidyalaya of Birbhum District participated in the Inter College State Sports & Games Championship, 2023 – 24 at the district level held during the period 29.02 2024 to 01.03 2024 at the venue of Chandidas Mahavidyalaya and was declared Winner / Runners up in Football / Kho Kho.

Date: 1.3.2024 Government Observer [Signature] Organizing Secretary [Signature] Chairman [Signature]
 Organizing Committee Organizing Committee



SURI VIDYASAGAR COLLEGE

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The Inter college state sports and games championship (DPI) Sports (State level) held on 24/03/2024 to 27/03/2024 at the venue of state authority of India, Netaji Subhas Eastern Center, Kolkata. Award certificates of the participants are attached following:





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The University of Burdwan




CERTIFICATE OF HONOUR

This is to certify that *Shri/Sm. Mrs. Satya*
of *Suri Vidyasagar College*, has participated in the *Inter*
Collegiate *Kolkata (Men)* *Tournament/Competition*
at *Netaji Subhas Open* from *27-01-24* to and
secured *Gold* position.

Event: _____
Towel Weight Distance: _____
Total Body Weight: _____
Stretch: _____ Chest & Link _____
Total Weight Lifted: _____

Highway Burdwan
Date: *27.01.24*

 President

Kamal
Sports Officer &
Secretary, Sports Board

The University of Burdwan



CERTIFICATE OF HONOUR

This is to certify that *Shri/Sm. Mr. Pong*
of *Suri Vidyasagar College*, has participated in the *Inter*
Collegiate *Kolkata (Men)* *Tournament/Competition*
at *Netaji Subhas Open* from *27-01-24* to and
secured *Gold* position.

Event: _____
Towel Weight Distance: _____
Total Body Weight: _____
Stretch: _____ Chest & Link _____
Total Weight Lifted: _____

Highway Burdwan
Date: *27.01.24*

 President

Kamal
Sports Officer &
Secretary, Sports Board



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CERTIFICATE OF HONOUR

This is to certify that *Shri/Sm. Anshady Ghosh*
of *Suri Vidyasagar College*, has participated in the *Inter*
Collegiate *Kabaddi (Men)* *Tournament/Competition*
at *Mahantganj Ground* from *25.05.21* to *26.05.21* and
secured *1st* position.

Event	_____
Time/Height/Distance	_____
Total Body Weight	_____
Branch	_____
Total Weight Taken	_____


Place: Burdwan
Date: _____

 **President**


Sports Officer &
Executive Sports Board

The University of Burdwan
SPORTS OFFICER (KABADDI)
BURDWAN

The University of Burdwan





CERTIFICATE OF HONOUR

This is to certify that *Shri/Sm. Anshady Ghosh*
of *Suri Vidyasagar College*, has participated in the *Inter*
Collegiate *Kabaddi (Men)* *Tournament/Competition*
at *Mahantganj Ground* from *25.05.21* to *26.05.21* and
secured *1st* position.

Event	_____
Time/Height/Distance	_____
Total Body Weight	_____
Branch	_____
Total Weight Taken	_____

Place: Burdwan
Date: _____

 **President**


Sports Officer &
Executive Sports Board

The University of Burdwan
SPORTS OFFICER (KABADDI)
BURDWAN



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The University of Burdwan



CERTIFICATE OF HONOUR

This is to certify that *Shri/Sm. Nishu Singh*
of *Sur Vidya Sagar*
Collegiate *Nalwadi (P.O.)* has participated in the *Inter*
at *Bhadriganj Ground* from *25.03.24* to *25.03.24* and
secured *1st* position.

Event	_____
Time/Height/Distance	_____
Total Body Weight	_____
Swath	_____
Total Weight Lifted	_____

Roll No. _____
Date: *27.04.2024*

Randi
Sports Officer B
Burdwan Sports Board

President

The University of Burdwan
Burdwan-731101

The University of Burdwan



CERTIFICATE OF HONOUR

This is to certify that *Shri/Sm. Nishu Das*
of *Sur Vidya Sagar*
Collegiate *Nalwadi (P.O.)* has participated in the *Inter*
at *Bhadriganj Ground* from *25.03.24* to *25.03.24* and
secured *1st* position.

Event	_____
Time/Height/Distance	_____
Total Body Weight	_____
Swath	_____
Total Weight Lifted	_____

Roll No. _____
Date: *27.04.2024*

Randi
Sports Officer B
Burdwan Sports Board

President

The University of Burdwan
Burdwan-731101



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CERTIFICATE OF HONOUR

This is to certify that *Shri/ Smt.* Bishnu Anwar Singh
of Net Vidyasagar College has participated in the *Inter*
Collegiate Kabaddi (Men) *Tournament/ Competition*
at Kalyanpur Ground from 21.09.18 to 1 and
secured 1st position.

Name: _____
Time Height Distance: _____
Race (Body Height): _____
Sex: _____ Weight: _____
Year Weight Lifted: _____

Prasanna
Sports Officer &
Secretary Sports Board

Prasanna
President

Major, Burdwan
Date: 21.09.2018



The University of Burdwan



CERTIFICATE OF HONOUR

This is to certify that *Shri/ Smt.* Mr. Animesh
of Net Vidyasagar College has participated in the *Inter*
Collegiate Kabaddi (Men) *Tournament/ Competition*
at Kalyanpur Ground from 21.09.18 to 1 and
secured 1st position.

Name: _____
Time Height Distance: _____
Race (Body Height): _____
Sex: _____ Weight: _____
Year Weight Lifted: _____

Prasanna
Sports Officer &
Secretary Sports Board

Prasanna
President

Major, Burdwan
Date: 21.09.2018



The University of Burdwan



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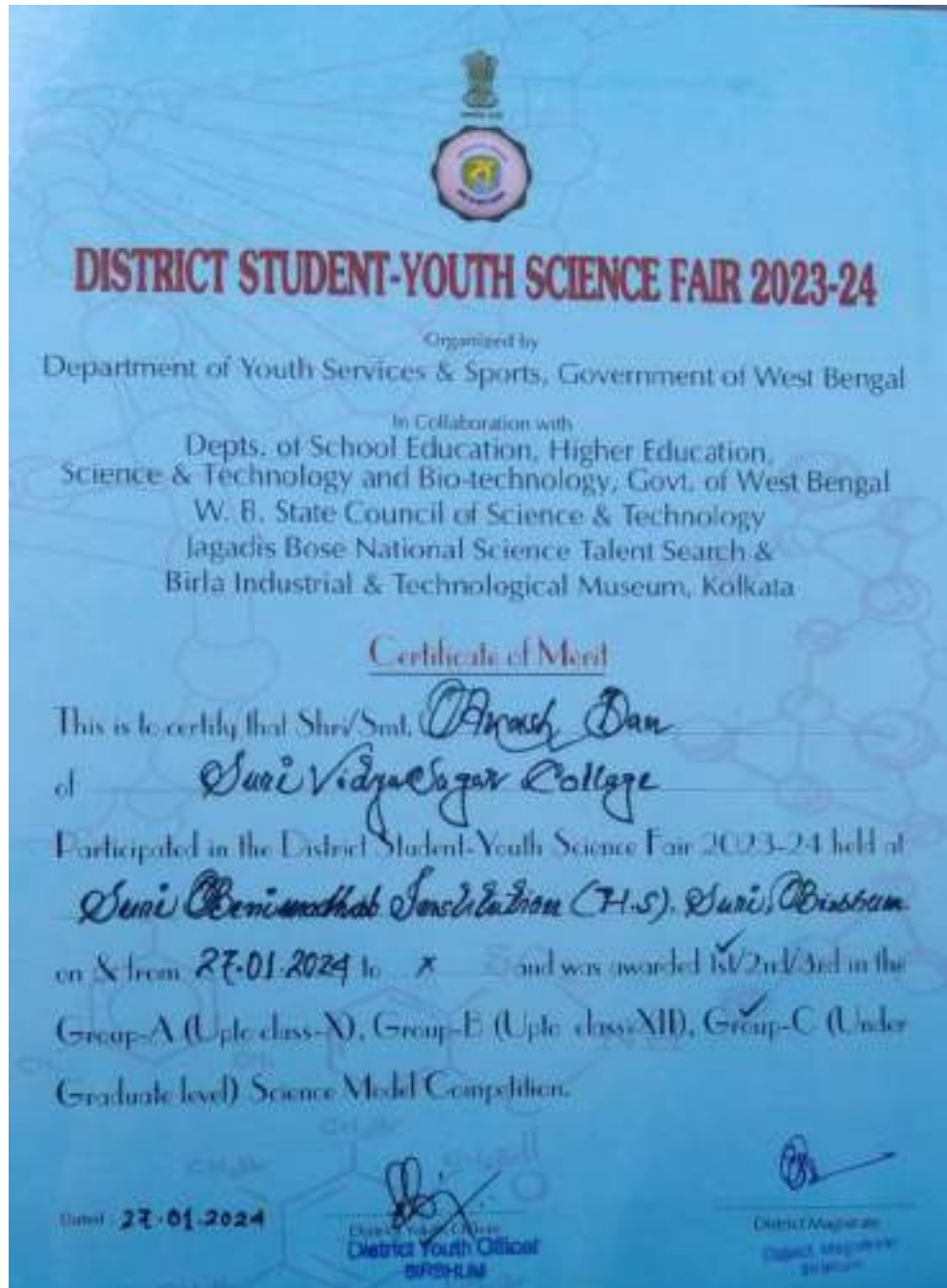
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West Bengal

State Student Youth Science Fair 2023-24

Organized by

In Association with

Department of Youth Services & Sports, Government of West Bengal

Department of School Education & Higher Education,
Department of Science and Technology & Bio-technology,
Government of West Bengal

West Bengal State Council of Science & Technology
Jagadis Bose National Science Talent Search and
Birla Industrial & Technological Museum, Kolkata

Certificate of Participation

This is to certify that Shri/Smt. Akash Das

Son/Daughter of _____

of Suri Vidyasagar College

District Birbhum participated in the Science Model
Competition of West Bengal State Student-Youth Science Fair 2023-
24 held at Vivekananda Yuba Bharati Krirangan, Kolkata on & from
8th-9th February, 2024 in Secondary/Higher Secondary /Under
Graduate/Post Graduate level.

Uttam Kumar Patra, IAS
Secretary & I.O. Director
Department of Youth Services & Sports
Government of West Bengal

Rajesh Kumar Sinha, IAS
Principal Secretary
Department of Youth Services & Sports
Government of West Bengal

Anoop Biswas
Minister-in-Charge
Department of Youth Services & Sports
Government of West Bengal



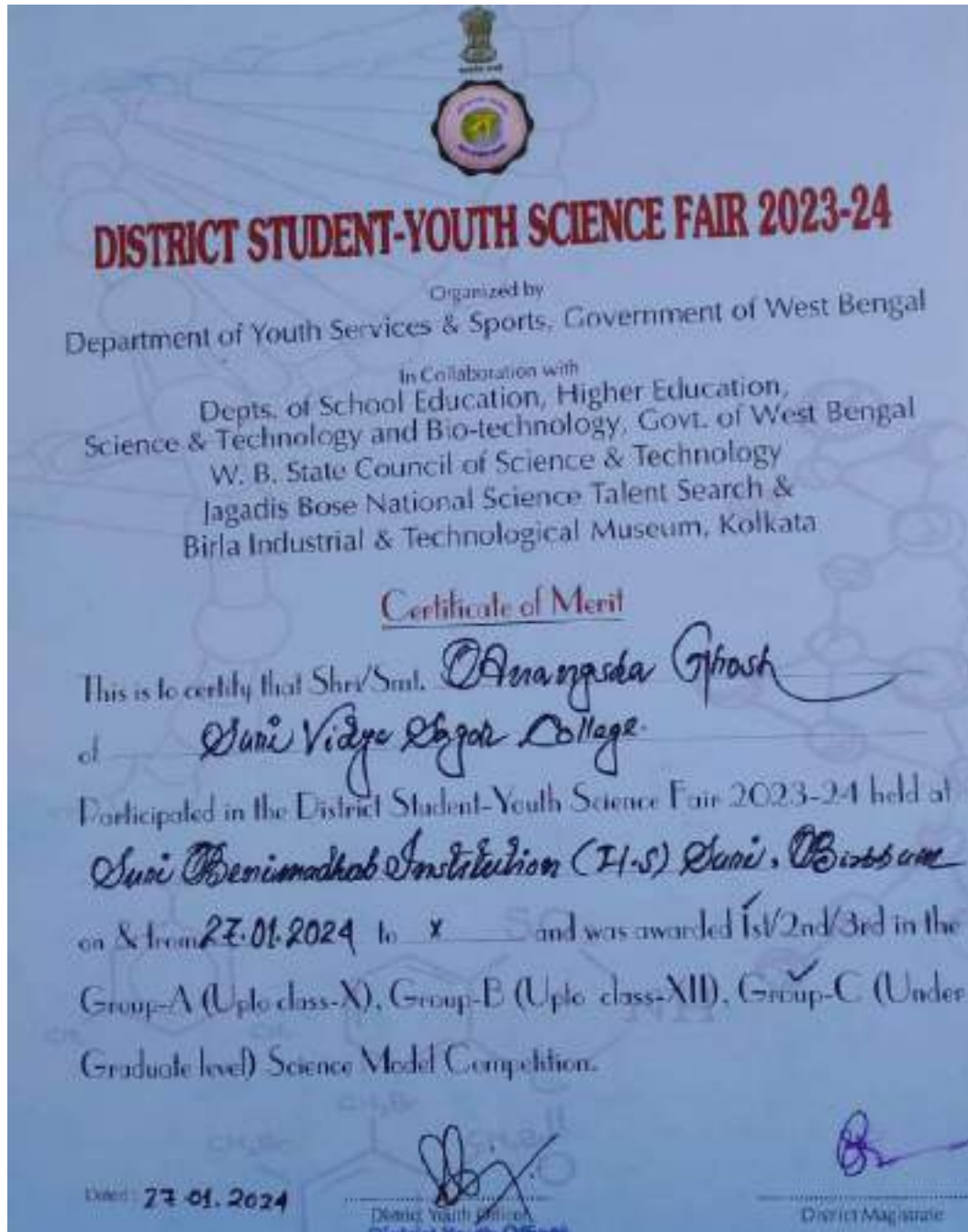
SURI VIDYASAGAR COLLEGE

(Govt. Sponsored & Constituent college of the University of Burdwan)

SURI, BIRBHUM, PIN – 731101, Ph. No. – 03462-255504

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West Bengal State Student Youth Science Fair 2023-24

Organized by

In Association with

Department of Youth Services & Sports, Government of West Bengal

Department of School Education & Higher Education,
Department of Science and Technology & Bio-technology,
Government of West Bengal

West Bengal State Council of Science & Technology

Jagadis Bose National Science Talent Search and
Birla Industrial & Technological Museum, Kolkata

Certificate of Participation

This is to certify that Shri/Smt. Anangsha Ghosh

Son/Daughter of Ranajit Ghosh

of Suri Vidyasagar College

District Birbhum participated in the Science Model

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Achievement in Sports by the students' of Suri Vidyasagar College during the year 2023-24:



Football women Inter college participants, at burdwan University 2024





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DPI Inter college sports and games State Meet 2023-2024 at Yuva vharati kriyangan,kolkata



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DPI Inter college sports and games 2023-2024 at Chandidas Mahavidyalaya Kho - Kho women runners up



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Kabadi runners up Inter college, at burdwan University 2023



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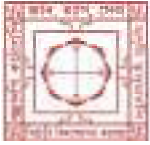
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Volleyball Men Inter college participants, at burdwan University 2024





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Dr. Inpan K. Parichha
Principal