



1. BOTANY (Honours)

Part - 1

Paper – 1: Cryptogams

Group (a) & (b)

Outcomes: -

1. Acquire fundamental knowledge in plant science and to make the student to understand that Botany is an integral part of the human life and developments.
2. Foster and encourage an attitude of curiosity, appreciation and enquiry of various life forms of plants.
3. Understand the identifying characters of the different types included in the syllabus.
4. Understand the diversity of plants with respect to Algae, Fungi, Lichens, Bryophytes, Pteridophytes.

Paper – 2: Microbiology, Fungi and Plant Diseases

Outcomes: -

1. Student will gain knowledge about the different cell organelles of microorganisms and their detailed function.
2. Understand the world of microbes, fungi and lichens.
3. Appreciate the adaptive strategies of the microbes, fungi and lichens.
4. To study the economic and pathological importance of microorganisms

BOTANY (Subsidiary)

Paper:-1

Outcomes:-

A student completing the course is able to understand different branches of Botany such as systematics, evolution, ecology, developmental biology, physiology, biochemistry, plant interactions with microbes and insects, morphology, anatomy, reproduction, genetics and molecular biology of various life-forms.

(PRACTICAL)

Outcomes: - Student will gain practical knowledge of theory paper.

BOTANY (General)

Group (a) Cryptogams

Outcomes:-

1. Acquire fundamental knowledge in plant science and to make the student to understand that Botany is an integral part of the human life and developments.
2. Foster and encourage an attitude of curiosity, appreciation and enquiry of various life forms of plants.
3. Understand the identifying characters of the different types included in the syllabus.
4. Understand the diversity of plants with respect to Algae, Fungi, Lichens, Bryophytes, Pteridophytes.

Group (b) Phanerogams

Outcomes:-



1. Acquaint with the aims, objectives and significance of taxonomy.
2. Identify the common species of plants their systematic position.
3. Develop inductive and deductive reasoning ability.
4. Acquaint with the basic technique in the preparation of herbarium.
5. Familiarizing with the plants having immense economic importance.

Practical

Outcomes: - Student will gain practical knowledge of theory paper.

BOTANY (Honours) Part-2

Paper – 3 (Gymnosperm and Angiosperm)

Outcomes:-

Students will be able to:

1. Distinguish between the two types of seeds plant -gymnosperm and angiosperms.
2. Describe the evolutionary and structural continuum linking megasporangia , ovels to seeds.
3. Explain the steps that place during the transition from ovule to seeds.
4. Summarize the trends that led to the evolution of ovules form less specialized megasporangia.
5. Knowledge of Angiosperm systematics through classifications, herbaria, botanical gardens and hotspots.
6. Understanding of the reproductive system in Angiosperms.

Paper – 4 (Anatomy, Embryology of Angiosperm & Applied Botany)

Group (a) Anatomy

Outcomes:-

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

1. Observation of variations that exist in internal structure of various parts of a plant and as well as among different plant groups in support for the evolutionary concept.
2. Skill development for the proper description of internal structure using botanical terms, their identification and further classification.

Group (b) Embryology

Outcomes:-

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

1. Understanding the various reproductive methods sub-stages in the life cycle of plants.
2. Observation and classification of the embryological variations in angiosperms.
3. Enthusiasm to understand evolution based on the variations in reproduction among plants.

Group (c)

Outcomes:-



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

1. Know the botanical name and economic importance of the following: oil seeds, fruits, timbers etc.
2. Explain the principles of plant tissue culture and biogas.

Practical

Student will gain practical knowledge of theory paper.

BOTANY (Subsidiary)

Paper:-2 Angiosperms, Plant Physiology and Environmental Biology

1. Angiosperm :-

(a) Morphology and Taxonomy

Outcomes:-

1. Acquaint with the aims, objectives and significance of taxonomy.
2. Identify the common species of plants and their systematic position.
3. Develop inductive and deductive reasoning ability.
4. Acquaint with the basic technique in the preparation of herbarium.
5. Familiarizing with the plants having immense economic importance.

(b) Anatomy

Outcomes:-

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

1. Observation of variations that exist in internal structure of various parts of a plant and as well as among different plant groups in support for the evolutionary concept.
2. Skill development for the proper description of internal structure using botanical terms, their identification and further classification.
3. Imparting an insight into the internal structure and reproduction of the most evolved group of plants, the Angiosperm.
4. Understand the individual cells and also tissues simultaneously.

(c) Embryology

Outcomes:-

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

1. Understanding the various reproductive methods sub-stages in the life cycle of plants.
2. Observation and classification of the embryological variations in angiosperms.
3. Enthusiasm to understand evolution based on the variations in reproduction among plants.

2. Plant Physiology:-



Outcomes:-

1. Student will develop the understanding of growth, development and reproduction in plants as well as understanding the physiological and metabolic changes happening along with the environmental impact.

3. Environmental Biology:-

Outcomes:-

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

1. Apply the scientific method and quantitative technique to describe, monitor and understand environmental systems.
2. Use interdisciplinary approaches such as ecology, economics, ethics and policy to devise solutions to environmental problems.
3. Be proficient in ecological field methods such as wildlife survey, biodiversity assessment, mathematical modeling and monitoring of ecological systems.
4. Use technology such as geographical information systems and computer programming to assist in problem solving.
5. Effectively understand and convey scientific materials from peer- reviewed sources.

Practical

Outcomes: - Student will gain practical knowledge of theory paper.

BOTANY (Honours) Part-3

Paper – 5 Group (a)

(Plant Physiology and Biochemistry)

Outcomes: -

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

1. Explain the water, solute and sugar transport process in plants.
2. Explain the different mechanism in plants use for water transport.
3. Explain how plants achieve water balance.
4. Acquire basic knowledge needed for proper understanding of plant functioning.
5. Familiarize with the basic skills and techniques related to plant physiology.
6. Understand the role, structure and importance of the bio molecules associated with plant life.

Group (b) Biochemistry

Outcomes: -

1. Students will be able to understand Brief outline of biosynthesis of amino acid.
2. Understanding the protein - structure and classification and protein biosynthesis in prokaryotes and eukaryotes.

Group (c)



Outcomes: -

1. Students will be able to understand the growth of hormones.

PAPER – 6 Group (a)

(Cytogenetics and Molecular Biology)

Outcomes: -

1. Learn about basic and advanced concepts in cytogenetics.
2. Understand Mendelian genetics through problem solving exercises.
3. Apply the knowledge of cytogenetics in plant breeding.
4. Understand the molecular basis of mutation and its phenotypic effect on the organism.
5. Learn about the various methods of crop improvement.
6. Develop skills in plant breeding such as emasculation, artificial pollination and induction of polyploidy.
7. Understand gene structure, regulation and modification of RNA.
8. Understand the concepts of recombinant DNA technology and gene cloning and its various application

Group (b)

Outcomes: -

1. Students will be able to learn conversion of germ-plasma.

PAPER – 7 Group (a) (Ecology)

Outcomes: -

1. Learn fundamental aspects of ecology including abiotic and biotic components, their structure, interrelationship and function.
2. Understand the different ecosystems.

Group (b)

Outcomes: -

1. Gain knowledge of phytogeography with reference to continental drift, endemism and biomes.
2. Develop skills in qualitative and quantitative measurement of various ecological parameters.

PAPER – 8 (Practical)

Outcomes: -

Student will gain practical knowledge of plant adaptation and physical and chemical properties of soil.

BOTANY General

Group (a) (Cytogenetics and Molecular Biology)

Outcomes: -



1. Learn about basic and advanced concepts in cytogenetics.
2. Understand Mendelian genetics through problem solving exercises.
3. Apply the knowledge of cytogenetics in plant breeding.
4. Understand the molecular basis of mutation and its phenotypic effect on the organism.
5. Learn about the various methods of crop improvement.
6. Develop skills in plant breeding such as emasculation, artificial pollination and induction of polyploidy.
7. Understand gene structure, regulation and modification of RNA.
8. Understand the concepts of recombinant DNA technology and gene cloning and its various application.

Group (b) Environment Biology

Outcomes:-

1. Learn fundamental aspects of ecology including abiotic and biotic components, their structure, interrelationship and function.
2. Understand the different ecosystems.

Group (c) Economic Botany

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

1. Know the botanical name and economic importance of the following: oil seeds, fruits, timbers etc.
2. Explain the principles of plant tissue culture and biogas.

Practical

Student will gain practical knowledge of PH of different types of soil and ecological adaptation.



2. CHEMISTRY HONOURS

Part -1

Paper-1 Group – A

Physical Chemistry

Outcomes: -

On completion of the course, students should be able to:

1. State and apply the laws of thermodynamics; perform calculations with ideal and real gases; design practical engines by using thermodynamic cycles; predict chemical equilibrium and spontaneity of reactions by using thermodynamic principles.
2. Apply the concepts of colloids and gels.
3. Learn depth knowledge about liquid states.

Group – B

Inorganic Chemistry

Outcomes: -

On completion of the course, students should be able to:

1. Appreciate the different theories of chemical bonding and be able to apply these theories to solve structures.
2. Understand s- Block and p-Block elements.

Paper-2 Group – A

Physical Chemistry

Outcomes: -

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

1. Atomic theory and its evolution.
2. Laws of thermodynamics and concepts.

Group – B

Organic Chemistry

Outcomes: -

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

1. The Structure and bonding of Hydrogen.
2. Know mechanism of Organic reaction.
3. Classification of Alcohols and nomenclature, Organic compounds of Nitrogen.

Practical



Gets practical knowledge of new organic techniques and to design experiments and valid conclusions using new preparation method.

General and Subsidiary

Outcomes: -

Group – A

Physical Chemistry

Outcomes: -

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

1. Atomic theory and its evolution.
2. Laws of thermodynamics and concepts.

Group – B

Inorganic Chemistry

Outcomes: -

On completion of the course, students should be able to:

1. Appreciate the different theories of chemical bonding and be able to apply these theories to solve structures.
2. Understand s- Block and p-Block elements.

Part -2

Paper-3 Group – A

Physical Chemistry

Outcomes: -

1. To know in detail about Kinetic Theory of Gases; Liquids and Chemical kinetics.
2. To learn in detail about reactions taking place in electrochemical cells.

Group – B

Inorganic Chemistry

Outcomes: -

1. To learn the group study and the metallurgy of transition and inner transition elements.
2. To study the basic concepts and application of coordination compounds.
3. To understand the chemistry of biological and carbonyl compounds.
4. To study the different concepts of acid-bases and non-aqueous solvents.

Paper-4 Group – A



Physical Chemistry

Outcomes: -

1. To learn the three laws of thermodynamics, about the properties and behaviour of solutions and also about different phases.

Group – B

Organic Chemistry

Outcomes: -

1. To enable the students to understand and appreciate the concepts of stereochemistry.

2. To study about the reactions of heterocyclic compounds.

3. To learn and understand the chemistry of carbonyl compounds.

4. To know the chemistry of carboxylic acids.

5. To enable the students to think and appreciate in a scientific a scientific manner through a comprehensive study of vitamins and terpenoid. An understanding of the methods of isolation, purification and structural elucidation of natural products.

Practical

Outcomes: -

1. To have a knowledge about analyzing organic compounds.

2. To know some important organic reactions.

3. To know about estimation of compounds.

Subsidiary & General

Outcomes: -

Group – A

Physical Chemistry

Outcomes: -

On completion of the course, students should be able to:

1. State and apply the laws of thermodynamics; perform calculations with ideal and real gases; design practical engines by using thermodynamic cycles; predict chemical equilibrium and spontaneity of reactions by using thermodynamic principles.

2. Apply the concepts of colloids and gels.

3. Learn depth knowledge about liquid states.

Group – B

Inorganic Chemistry



Outcomes: -

1. To learn the group study and the metallurgy of transition and inner transition elements.
2. To study the basic concepts and application of coordination compounds.
3. To understand the chemistry of biological and carbonyl compounds.
4. To study the different concepts of acid-bases and non-aqueous solvents.

Group – C

Organic Chemistry

Outcomes: -

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

1. The Structure and bonding of Hydrogen.
2. Know mechanism of Organic reaction.
3. To understand the concepts in aromaticity and mechanism of electrophilic substitution reactions.

Practical

Outcomes: -

1. Analyze the Acidmetry, alkalimetry and organic compound.

Part -3

Paper-5

Physical Chemistry

Outcomes: -

1. To gain the knowledge about electrochemistry, wave mechanics, spectroscopy, thermodynamics and photochemistry.

Paper-6

Inorganic Chemistry

Outcomes: -

1. To know about magnetic properties, nuclear chemistry, inorganic polymers and bond method.

Paper- 7

Organic Chemistry

Outcomes: -

1. To analyse the reaction mechanism, organic reaction and molecular rearrangements, heterocyclic compounds and ureids.

Paper- 8

Practical

Outcomes: -

1. To learn synthesis of organic compound and reaction rate of hydrolysis.



3. ENGLISH HONOURS

B.A 1st Year

Paper 1: History of English literature

Course Outcome:

1. Acquaint themselves with the historical background, literary trends and major writers of sixteenth century English Literature.
2. To understand the historical background, literary trends and major writers of Seventeenth and Eighteenth century.
3. Evaluate the historical background, literary trends and major writers of Nineteenth century.
4. Appropriate the historical background, literary trends and major writers of Twentieth century British literature.

Paper 2: British Poetry

Course Outcome:

1. Appreciate the aesthetic of literature
2. Appreciate a work of art
3. Appreciate and Identify the Various functions of a language of poetry.

B.A 2nd Year

Paper 3: British Drama

Course Outcome:

1. Appreciate the aesthetic of literature
2. Appreciate a work of art
3. Develop a love for the Literary Prose
4. Acquaint themselves with the Renaissance's play

Paper 4: English Essayists and Novels

Course Outcome:

1. Appreciate novel with reference to Emile Bronte and Thomas Hardy
2. Develop a love for the Literary Prose

B.A 2nd Year

Paper 5: Literary Criticism

Course Outcome:

1. Comprehend Classical and Neo-classical criticism with special reference to Dryden
2. To understand Romantic poetics and the paradigm shift it effected in literary criticism
3. Acquainted with Victorian and Modern criticism

Paper 6: Twentieth Century British Literature



Course Outcome:

1. Appreciate British modern poetry.
2. Appreciate problem play with reference to 'Candida'.
3. Appreciate novel with reference to 'A passage to India'.
4. Analyse the essays of Aldous Huxley.

Paper 7: Anthology of Indo- Anglican Verses

Course Outcome:

1. Appreciate the Indian poetry.
2. Acquainted themselves with the works of Indo-Anglican writers

Paper 8: Literary Essays

Course Outcome:

1. To understand the historical, political, social and literary trends of British literature.

B.A. PART -1

SUBSIDIARY

Course Outcome:

1. To understand English Prose, poetry and play by G.B. Shaw's "Arms and the Man".

COMPOSITION

Course Outcome:

1. Acquainted themselves with the work of George Orwell's "Animal Farm".
2. Students will be able to understand grammar and learn translation of both Hindi to English and vice-versa.

GENERAL

Course Outcome:

1. To understand an anthology of poetry.
2. To understand comedy and prosody.

B.A. PART - 2

SUBSIDIARY

Course Outcome:

1. Acquainted themselves with the work of Earnest Hemingway's "The Old Man and Sea".
2. Students will able to write essay and paragraph writing.

COMPOSITION

Course Outcome:

1. Acquainted themselves with the work of Shakespeare's "Julius Caesar".
2. Students will able to write essay and letter writing.



GENERAL

Course Outcome:

1. To understand an anthology of Short- Stories.
2. Acquainted themselves with the work of Shakespeare's "Romeo and Juliet".
3. To understand Rhetoric and Precise writing.

B.A. PART - 3

General

Course Outcome:

1. Acquainted themselves with the work of Earnest Hemingway's "The Old Man and Sea".
2. Students will be able to understand grammar and learn translation of both Hindi to English and vice-versa.
3. Students will able to write essay.



4. ECONOMICS HONOURS

B.A 1st Year

Paper 1: Micro Economics

Course Outcome:

On successful completion of the course, a student will be able to develop a sound understanding of the core microeconomic concepts that economists use to understand the process of decision-making by an economic agent(s).

Paper 2: Macro Economics

Course Outcome:

Develop an understanding of the interrelationships among the various macroeconomic variables and the way they impact upon the working of the economy as a whole, thereby determining the course of the economy.

Subsidiary

Course Outcome:

1. On successful completion of the course, a student will be able to develop a sound understanding of the core microeconomic concepts that economists use to understand the process of decision-making by an economic agent(s).

2. Develop an understanding of the interrelationships among the various macroeconomic variables and the way they impact upon the working of the economy as a whole, thereby determining the course of the economy.

General

Macro Economics

Course Outcome:

Develop an understanding of the interrelationships among the various macroeconomic variables and the way they impact upon the working of the economy as a whole, thereby determining the course of the economy.

B.A. 2nd Year

Paper 3: Economic Problems of India since Independence

Course Outcome:

The students will be able to understand the objectives and Strategy of Planning, the concept of economic reforms and the problems of economic development during last seven decades.

Paper 4: Public Economics

Course Outcome:

The development of an understanding of public sector financial resources, fiscal policy and stabilization policy, of various aspects of taxation, debt management and budgetary policy.

Subsidiary

Planning and the economics

Course Outcome:



1. Students will be to explain the concept of planning and its types, Indian economy, Industries and foreign trades of India.

General

Macro Economics

Course Outcome:

Develop an understanding of the interrelationships among the various macroeconomic variables and the way they impact upon the working of the economy as a whole, thereby determining the course of the economy.

B.A. 3rd Year

Paper 5: Principal of Economic growth and Planning

Course Outcome:

Students will be able to learn about the concepts and fundamental theories of economic development, theories of economic growth, and technical progress.

Paper 6: Economic Development of U.K., U.S.A., U.S., and Japan

Course Outcome:

The knowledge of economic history of developed nations will enable to understand the phases of growth.

Paper 7: Statistics and field works

Course Outcome:

Understanding and applying statistical tools for drawing meaningful inferences for conducting survey.

Paper 8: Mathematical Economics & Statistics

Course Outcome:

By studying this course, students are expected to understand classical optimization, differential calculus to be used in econometrics and optimisation, and input-output & linear programming applications of dynamic programming solution multistage optimization problem.

General

Economic Problems of India

Course Outcome:

The students will be able to understand the objectives and Strategy of Planning, the concept of economic reforms and the problems of economic development during last seven decades.



5. MATHEMATICS (HONOURS)

Part-1

- Paper I
 - Course Outcomes:
To develop better understanding of set theory, matrices, linear programming, theory of equations, trigonometry.
- Paper II
 - Course Outcomes:
To gain depth knowledge about calculus and analytical geometry.
- (General & Subsidiary)
 - Course Outcomes:
To know the essential materials related to set theory, matrices, linear programming, trigonometry, analytical geometry.

Part-2

- Paper III
 - Course Outcomes:
To develop better understanding of real analysis, infinite series, abstract algebra.
- Paper IV
 - Course Outcomes:
To gain depth knowledge related to vector calculus, differential equation, statistics, dynamics.
- (Subsidiary)
 - Course Outcomes:
To know the essential understanding of differential calculus, integral calculus, differential equations, vector analysis, mechanics.
- (General)
 - Course Outcomes:
To gain basic knowledge about calculus and geometry.

Part-3

- Paper V
 - Course Outcomes:
To develop better knowledge of functions of two variables, implicit functions, maxima and minima, sequences and series.
- Paper VI
 - Course Outcomes:
To know the basics of group theory, rings, linear algebra.
- Paper VII
 - Course Outcomes:
To know the basics of statics, dynamics, attraction and protection, hydrostatics, differential equations.
- Paper VII
 - Course Outcomes:
To acquire depth knowledge about spherical astronomy.
- Paper VIII

ESTD : 1952



Raj Narain College, Hajipur, (Vaishali)
A NAAC ACCREDITED INSTITUTION (Grade B)
(With 'Centre of Excellence' Status of Govt. Of Bihar)
A Constituent Unit of B.R.A. Bihar University, Muzaffarpur



- **Course Outcomes:**
To acquire depth knowledge about numerical analysis.
- **Paper VIII**
 - **Course Outcomes:**
To become familiar with probability theory.
- **General**
 - **Course Outcomes:**
To gain the knowledge about theory of numbers.



6. PHILOSOPHY HONOURS

B.A 1st Year

Paper 1: Indian Philosophy

Course Outcomes:

1. Students will be introduced to the basic issues in epistemology through original readings.
2. Students will become acquainted with the problem of skepticism and solutions to it.
3. Students will become acquainted with issues regarding the foundations of knowledge.
4. Students will be acquainted with externalist aspects of epistemology and also learn about Indian epistemology.

Paper 2: Metaphysics

Course Outcomes:

1. The outcome is to cultivate in-depth knowledge of Indian Metaphysics, which contain the unique concept of the world, self and the absolute reality.

Subsidiary & pass

Indian Philosophy

Course Outcomes:

Course Outcomes:

1. Students will be introduced to the basic issues in epistemology through original readings.
2. Students will become acquainted with the problem of skepticism and solutions to it.
3. Students will become acquainted with issues regarding the foundations of knowledge.
4. Students will be acquainted with externalist aspects of epistemology and also learn about Indian epistemology.

2nd Year

Paper 3: Ethics

Course Outcomes:

1. Aims to introduce students to a type of ethics which is not about principles and what action to undertake but about identifying the logical rules that underlie moral arguments and action and about recognizing the basic structure of ethical theories.
2. Helps students to identify the nature of moral language and terminology. This skill enables students to understand the fine nuances of legal language particularly pertaining to jurisprudence.
3. Introduces students, through readings, to different arguments used by philosophers in support of moral judgment they adopt.
4. Enables students to recognize and truly understand philosophical methodology and argumentation methods employed by this form of ethics.
5. Makes students aware of how contours pertaining to epistemology, metaphysics, semantics, psychology feed into our understanding of moral concepts.



Paper 4: History of Western Philosophy

Course Outcomes:

1. This course starts with the advent of modern Western Philosophy, from Descartes down to Kant, centering on classical theories of Rationalism, Empiricism and Criticism.
2. The principal agenda is to introduce and substantiate the problem whether human cognition develops from either of two mutually independent faculties of sensibility or understanding, or from a synthesis of the two.
3. On the one hand it follows a historical and chronological development of ideas.
4. On the other hand this historical survey is placed in a tenor of a logical transition from one theory to the other, coupled with critical evaluation.
5. The course is intensive in so far as it focuses on a few philosophers – Descartes and Leibnitz– the archetypal of rationalists; Hume – the ideal representative of empiricism; and is finally rounded off by Kant's Criticism.
6. Within its theoretical framework it also incorporates the philosophical foundations of a sound environmental ethics as well as a global humanistic approach.
7. E.g. the pan-psychism of Leibnitz showing the unreality of spatial boundary sensitises students to the immaculate blend of the animate and the inanimate; while Kant's claims about all humanity for times operating with the same a priori forms of cognition opens up a vast expanse of cross-cultural communication and empathy.

Subsidiary

Metaphysics & Ethics

Course Outcomes:

1. The outcome is to cultivate in-depth knowledge of Indian Metaphysics, which contain the unique concept of the world, self and the absolute reality.
2. Aims to introduce students to a type of ethics which is not about principles and what action to undertake but about identifying the logical rules that underlie moral arguments and action and about recognizing the basic structure of ethical theories.
3. Helps students to identify the nature of moral language and terminology. This skill enables students to understand the fine nuances of legal language particularly pertaining to jurisprudence.
4. Introduces students, through readings, to different arguments used by philosophers in support of moral judgment they adopt.
5. Enables students to recognize and truly understand philosophical methodology and argumentation methods employed by this form of ethics.
6. Makes students aware of how contours pertaining to epistemology, metaphysics, semantics, psychology feed into our understanding of moral concepts.

General

Course Outcomes:

Metaphysics

1. The outcome is to cultivate in-depth knowledge of Indian Metaphysics, which contain the unique concept of the world, self and the absolute reality.



3rd Year

Paper 5: Philosophy of Religion

Course Outcomes:

- To familiarise the students with the nature and scope of the philosophy of religion.
- 2. To acquaint the students with religious epistemology
- 3. To obtain an understanding about the dynamic of religious experience.
- 4. To understand the nature and function of religious language
- 5. To enlighten the students about the scope and limitations of religious hermeneutics.
- 6. To develop critical perspectives on religion and to cultivate religious tolerance.

Paper 6: Social and political Philosophy

Course Outcomes:

- 1. To explain the nature of social philosophy and political Philosophy.

Paper 7: Logic and analysis

Course Outcomes:

- 1. Students will develop interest in logic both as a method of derivation and as a way of finding structure in language.
- 2. Interest will be generated in the relation between natural language and formal languages.
- 3. Students will become adept at truth tables, and methods of derivation like conditional proof, indirect proof, truth trees.
- 4. Students will understand the significance of the logics of necessity and possibility and will learn the debates around modalities in philosophy.

Paper 8: Concept of Indian Philosophy

Course Outcomes:

- 1. Students will become acquainted with issues regarding the foundations of knowledge, liberation, caustion, samanya, etc.
- 2. Students will be acquainted with externalist aspects of epistemology and also learn about Indian epistemology.

General

Social Philosophy

Course Outcomes:

- 1. To explain the nature of social philosophy.



7. POLITICAL SCIENCE HONOURS

B.A 1st Year

Paper 1: Political Theory

Course Objectives:

This course seeks to introduce the students to major approaches in theorizing political life and to the major concepts in the discourse of politics. The course tries to make the students understand how the social and power relations are theorized by various theoretical projects. Political theories, being socio psychological structures; the major aim of the course would be to make the students understand and analyze the context of the emergence of the theoretical projects/structures. The politics of each such theoretical project would be critically evaluated.

Paper 2: Comparative Government and Politics

Course Objectives:

1. Tracing the evolution of Comparative Politics as a discipline and drawing a distinction between Comparative Politics and Comparative Government.
2. Investigating the nature and scope of Comparative Politics.
3. Analysing the approaches the approaches and models of comparison: systems analysis; structural functionalism; and institutional approach.
4. Critically analysing the features of a liberal democratic and socialist political system with focus on U.K., U.S.A., France, Switzerland & Nepal.

General

Political Theory

Course Objectives:

This course seeks to introduce the students to major approaches in theorizing political life and to the major concepts in the discourse of politics. The course tries to make the students understand how the social and power relations are theorized by various theoretical projects. Political theories, being socio psychological structures; the major aim of the course would be to make the students understand and analyse the context of the emergence of the theoretical projects/structures. The politics of each such theoretical project would be critically evaluated.

2nd Year

Paper 3: Indian Political System

Course Objectives:

1. Introducing the Indian Constitution with a focus on the role of the Constituent Assembly and examining the essence of the Preamble.
2. Examining the Fundamental Rights and Duties of Indian citizens with a study of the significance and status of Directive Principles.
3. Assessing the nature of Indian Federalism with focus on Union-State Relations.
4. Critically analysing the important institutions of the Indian Union: the Executive: President; Prime Minister, Council of Ministers; Governor, Chief Minister and Council of Ministers; The legislature: Rajya Sabha, Lok Sabha,



Speaker, Committee System, State Legislature, The Judiciary: Supreme Court and the High Courts: composition and functions- Judicial Activism.

5. Critically evaluating the Indian Party system – its development and looking at the ideology of dominant national parties.

6. Evaluating the role of various forces on Indian politics: religion; language; caste; tribe; regionalism; business; working class and peasants.

7. Evaluating the Electoral Process in India with focus on the Election Commission: Composition, Functions and Role.

Paper 4: International Politics

Course Objectives:

1. The students will get an overview about the value, evolution and scope of international politics.
2. It will help them to get acquainted with the basic ideas of International politics.
3. It will familiarize the students with different approaches to the study of International Politics.
4. It will also give them a historical background of the discipline which will help them understand International Politics in a better way.

Subsidiary

Modern Government

Course Objectives:

1. Examining diverse political systems: Liberal-democratic, Authoritarian, Socialist forms of political systems.
2. Exploring the Constitution of UK: salient features; the executive – the Crown, Prime Minister and cabinet; the legislature: House of Lords, House Commons, speaker and Committees; Party System in UK.
3. Exploring the US Constitution: salient features; the executive: President; Legislature: Senate. House of Representative; Speaker; Judiciary: the composition and role of the Supreme Court; Bill of Rights; Party System.
4. Making a comparative analysis of the following institutions of UK and USA: Legislature, Executive and party systems.
5. Critically evaluating the Indian Party system – its development and looking at the ideology of dominant national parties.
6. Evaluating the role of various forces on Indian politics: religion; language; caste; tribe; regionalism; business; working class and peasants.

General

Course Objectives:

1. Tracing the evolution of Comparative Politics as a discipline and drawing a distinction between Comparative Politics and Comparative Government.
2. Investigating the nature and scope of Comparative Politics.
3. Analysing the approaches the approaches and models of comparison: systems analysis; structural functionalism; and institutional approach.



4. Critically analysing the features of a liberal democratic and socialist political system with focus on U.K., U.S.A., France, Switzerland & Nepal.

3rd Year

Paper 5: Public Administration

Course Objectives:

This course is introduced the students to the elements of Public Administration. This would help them to obtain a sustainable conceptual perspective on Public Administration. In addition the course introduces to students to the growth of such institution devices as to meet the need of changing time. The emphasis is on the administrative theory, including organization and administrative behaviour. The course also specifically explores issues in Indian administration including legislative, executive and financial administration. The course is expected to deliver leadership and management skills.

Paper 6: Political Thought

Course Objectives:

Students will become aware of the major trends within ancient Indian political thought and will gain knowledge about the actual political philosophy in India, the Indian intellectual response to political concepts, ideas, and debates.

Paper 7: Political Sociology

Course Objectives:

1. The students will acquire deep understanding of the main concepts of the Political Sociology.
2. Students are expected to gain a broader view of the political phenomena.

Paper 8: Special

Group (a): International Law and Organization

Course Objectives:

1. To teach and discuss the important doctrines of international law.
2. To help students understand both the legal and political aspects of international decisions and events. It is my belief that international law cannot be discussed or understood without taking into account the political realities that surround every international dispute. Similarly, the outcome of many international political disputes is profoundly affected by international law.
3. To encourage students to think more analytically, write more clearly, and present themselves effectively in class discussions and presentations. Specifically, I expect students to learn to read a text carefully as is required of anyone who works with legal documents. Students should also improve their presentation skills in this class, and they should become better at explaining and defending their ideas to a group. Each student is also expected to write clearly and effectively.

Group (b): Local self-Government- India & England

Course Objectives:

1. To understand the System of Local Self Government: Origin and Development.



2. To analyse the Panchayati Raj System of Bihar and Composition and Functions of Municipality and Municipal Corporations.

Group (c): National Movement & Constitutional Development of India

Course Objectives:

1. To provide an overview of nationalism and Indian National Movement.
2. To develop an understanding about the Constitutional development of India.
3. To become aware of the features of Indian political traditions and the basic philosophy of Indian Constitution.
4. To develop the concept of Non-Cooperation Movement, partition of India and Independence Act, 1945.

General

Group (a): National Movement

Course Objectives:

1. To provide an overview of nationalism and Indian National Movement.
2. To develop the concept of Quit India Movement, Non-Cooperation Movement, partition of India and Independence Act, 1945.

Group (b) Indian Political System

Course Objectives:

1. Introducing the Indian Constitution with a focus on the role of the Constituent Assembly and examining the essence of the Preamble.
2. Examining the Fundamental Rights and Duties of Indian citizens with a study of the significance and status of Directive Principles.
3. Assessing the nature of Indian Federalism with focus on Union-State Relations.
4. Critically analysing the important institutions of the Indian Union: the Executive: President; Prime Minister, Council of Ministers; Governor, Chief Minister and Council of Ministers; The legislature: Rajya Sabha, Lok Sabha, Speaker, Committee System, State Legislature, The Judiciary: Supreme Court and the High Courts: composition and functions- Judicial Activism.
5. Critically evaluating the Indian Party system – its development and looking at the ideology of dominant national parties.
6. Evaluating the role of various forces on Indian politics: religion; language; caste; tribe; regionalism; business; working class and peasants.
7. Evaluating the Electoral Process in India with focus on the Election Commission: Composition, Functions and Role.



8. PSYCHOLOGY HONOURS

B.A 1st Year

Paper 1: General Psychology

Course Objectives:

1. Understand the bases sensory actions and the processes of integration of sensory actions in creating and interpreting perceptual events.
2. Gain knowledge of the important processes and principles of human learning as well as the structural functional attributes of human memory to help conserve the learning outcomes, the process of thinking and role of intelligence.
3. Apply psychological principles to everyday life in positive ways.
4. Draw logical and objective conclusions about behaviour and mental processes from empirical evidence.
5. Evaluate misconceptions or erroneous behavioural claims based on evidence from psychological science.

Paper 2: Psychopathology

Course Objectives:

1. Understand the issues involved in defining normal and abnormal behaviour.
2. Describe the scientist-practitioner approach to psychopathology.
3. Describe on categories of focus underlying the study and discussion of psychological disorders.

Practical

Course Objectives:

The course aims to deliver practical and in-depth experience of motor learning, attention and distraction.

Subsidiary & Pass

General Psychology

Course Objectives:

1. Understand the bases sensory actions and the processes of integration of sensory actions in creating and interpreting perceptual events.
2. Gain knowledge of the important processes and principles of human learning as well as the structural functional attributes of human memory to help conserve the learning outcomes, the process of thinking and role of intelligence.
3. Apply psychological principles to everyday life in positive ways.
4. Draw logical and objective conclusions about behaviour and mental processes from empirical evidence.
5. Evaluate misconceptions or erroneous behavioural claims based on evidence from psychological science.

Practical

Course Objectives:

The course aims to deliver practical and in-depth experience of motor learning, attention and distraction.

2nd Year



Paper 3: Group (a) Research Methodology

Course Objectives:

1. To understand the tools and techniques used in collecting, analyzing and interpreting data.
2. To enhance the understanding of various research designs.
3. To develop their logical thinking required in carrying out scientific research.

Group (b) Statistics

Course Objectives:

1. To help students develop knowledge and understanding of the application of statistics within Psychology.
2. To help students develop Critical Thinking for application of appropriate statistical analysis in psychological research.

Paper 4: Social Psychology

Course Objectives:

1. To explain the psychological aspects of various social phenomena.
2. To provide sufficient knowledge and information about the nature and history of social psychology.
3. To help them understand human behaviour in social settings.
4. To explain dynamics of social relations, conflict, prejudice and cooperation.
5. To help students understand how Health Psychology as a specialty within psychology addresses the role of behavioural factors in health and illness, its basic theories, models and applications.

Practical

Course Objectives:

The course aims to deliver practical and in-depth knowledge of Intelligence test and personality inventory.

Subsidiary & General

Abnormal Psychology

Course Objectives:

1. Students are introduced to major issues and scientific principles underlying abnormal human behaviour.

Practical

Course Objectives:

The course aims to deliver practical and in-depth knowledge of pass along, block design and cube construction.

3rd Year

Paper 5: History of Psychology

Course Objectives:

1. Explore the nature of scientific progress, as discussed by philosophers, historians and sociologists of science.
2. Interrogate assumptions about the methods that define psychological research practice.



3. Debate the nature and importance of contexts (historical, social, geographical, moral) in which psychologists functioned.

Paper 6: Industrial & Educational Psychology

Course Objectives:

1. To help the students to develop cognizance of the importance of human behaviour.
2. To enable students to describe how people behave under different conditions and understand why people behave as they do.
3. To provide the students to analysis the specific strategic human resources demands for future action.
4. To enable the students to synthesize related information and evaluate options for the most logical and optimal solution.
5. To understand human behaviour in educational context
6. To understand factors underlying teaching-learning process

Paper 7: Clinical and Developmental Psychology

Course Objectives:

1. To develop the skill of plan, conduct, evaluate in areas relevant to clinical psychology.
2. Understanding the theories and practice of clinical psychology.
3. Understanding and evaluate the clinical disorders.
4. Define and identify key concepts in multiple areas of lifespan psychology including concepts, facts and theoretical perspectives.
5. Identify how interactions among hereditary and environmental influences impact development across lifespan
6. Demonstrate knowledge of and explain concepts related to lifespan development.
7. Apply lifespan psychological concepts to the solutions of current issues and problems, such as, ethics, parenting, discipline, divorce, midlife crisis, dual-income families, aging and /or evaluation of presentation

Practical

Course Objectives:

The course aims to deliver practical and in-depth knowledge about law for weight, ergography pneumography etc.

General

Social Psychology

Course Objectives:

1. To explain the psychological aspects of various social phenomena.
2. To provide sufficient knowledge and information about the nature and history of social psychology.
3. To help them understand human behaviour in social settings.
4. To explain dynamics of social relations, conflict, prejudice and cooperation.
5. To help students understand how Health Psychology as a specialty within psychology addresses the role of behavioural factors in health and illness, its basic theories, models and applications.



9. HISTORY HONOURS

B.A 1st Year

Paper 1: History of Ancient India

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

1. Acquire knowledge about the evolution of human society, and transformation of ancient civilization, Cultural pattern, age of Mauryas, Guptas, Harshvardhan and Pallavs.
2. Acquire knowledge about the origin, features, nature and class composition of various societies.

Paper: 2 History of Great Britain from 1485-1884

Course Outcome:

1. Students will able to enhance their knowledge about history of Britain, Reformation, the Industrial Revolution etc.
2. Students will able to understand the causes of civil war and People's Movement.

History (sub)

Indian History From Earliest times to 1526

Course Outcome:

1. Acquire the knowledge about the Indus Valley Civilization, the age of Guptas with special reference to Samudragupta and Chandragupta – Social, economic and cultural development decline.
2. Acquire the knowledge about Bhakti and Sufi-movement.

History(Pass) Indian History From Earliest times to 1526

Course Outcome:

1. Acquire the knowledge about the Indus Valley Civilization, the age of Guptas with special reference to Samudragupta and Chandragupta – Social, economic and cultural development decline.
2. Acquire the knowledge about establishment of Turkish rule, expansion of Delhi Sultanate, causes of Panipat etc.

B.A. 2nd Year (Hon.)

Paper 3: History of India from 1206-1757

Course Outcome:

1. Acquire the knowledge about establishment of Turkish rule, expansion of Delhi Sultanate, causes of Panipat, Mughal Empire, Rise of Maratha etc.
2. To understand cultural development.

Paper 4: History of Modern Europe, 1789-1945

Course Outcome:

1. To understand the causes, nature, achievements of National Assembly, Reign of Terror of French Revolution.
2. They can get the knowledge of causes and result of First & Second world war.
3. They should able to cooperate with globalization.



4. They can get the knowledge of modern industrialization of world.

5. Students will study the economic and social condition of Europe.

History (sub & general)

History of India from 1526-1950

Course Outcome:

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

1. Acquire knowledge about Mughal Empire, Non-cooperation Movement, Independence and Partition.

B.A. 3rd Year (Hon.)

Paper 5: History of India, 1757-1857

Course Outcome:

Upon completion of this course the student shall be able to:

1. Outline key developments of the 18th century in the Indian subcontinent.
2. Explain the establishment of Company rule and important features of the early colonial regime.
3. Explain the peculiarities of evolving colonial institutions and their impact.
4. Elucidate the impact of colonial rule on the economy.
5. Discuss the social churning on questions of tradition, reform, etc. during first century of British colonial rule.
6. Assess the issues of landed elite, and those of struggling peasants, tribals and artisans during the Company Raj.

Paper 6: History of India, 1858-1947

Course Outcome:

Upon completion of this course the student shall be able to

1. Know the India's relation with Persia, Nepal Tibet etc.
2. Analyse the problem of decentralization
3. Explain the Impact of Indian National Movement

Paper 7: (a) History of the far East (China, Japan) [Mid 19th to mid 20th Century]

Course Outcome:

Upon completion of this course the student shall be able to:

1. Develop an in-depth understanding of China's engagement with the challenges posed by imperialism, and the trajectories of transition from feudalism to a bourgeois capitalist modernity.
2. To locate these historical transitions in light of other contemporaneous trajectories into a global modernity, especially that of Japan.
3. Analyse significant historiographical shifts in Chinese history, especially with reference to the discourses of nationalism, imperialism, and communism.
4. Investigate the political, economic, social and cultural disruptions caused by the breakdown of the centuries old Chinese institutions and ideas, and the recasting of tradition to meet modernist challenges.
5. Comprehend the genesis and unique trajectories of the Chinese Communist Revolution.
6. Locate the rise of China and Japan in the spheres of Asian and world politics respectively.
7. Explain Japan's attempts to create new institutional structures and recast traditions to encounter challenges of the west.
8. Analyse historiographical shifts in Japanese history in the context of global politics. 9. Examine the divergent pathways to modernity followed by Japan.



Paper 7: (b) History of West Asia [Mid 18th to mid 20th Century]

Course Outcome:

Upon completion of this course the student shall be able to:

1. Explain major economic, social, political and intellectual developments in Europe during the 18th and 20th centuries.
2. Understand different movement as Turkish, Nationalism etc.

Paper 8: (a) Rise of Modern west (Mid 15th century to the American Revolution)

Course Outcome:

1. The student will get to know the evolution of 17th and 18th century European economic, social and political scenario, intellectual currents and the issues involved in the American Revolution.

Paper 8: (b) History of the U.S.A., 1776-1945

Course Outcome:

1. They will learn about the socio-political and economical status of USA after consolidation of colonial power.
2. Students will know how the discrimination between north and south America caused civil war.
3. They acquire knowledge how to growth capitalism in USA and becomes a World power.
4. They will gather knowledge how the USA introduced New Deal and remained abandoned from all warfare activities of the World and ultimately turned as controller country of World politics.

Paper 8: (b) History of the Russia 1856-1953

Course Outcome:

- 1.. They will gather knowledge how the Russia introduced New Deal and remained abandoned from all warfare activities of the World and ultimately turned as controller country of World politics.

Paper (General)

Course Outcome:

This paper gives an idea about the cold war and its consequences, problem of third world countries, foundation and role of UNO.



10. PHYSICS (HONS)

paper 1

Course Outcomes

Special Theory of Relativity:

- Trains the student in basic and advanced concepts in special relativity and introduces the basic ideas upon which general relativity is based on. Also provides in depth training in applications of group theory in relativity. Prepares the student for studying general relativity in future

Mechanisms and properties of Matter:

- Apply the equation of motion to one or two dimensions of the system in order to understand kinematics of the body under the various conditions of applied force
- Apply the knowledge in construction of beams, bridges etc.
- Apply knowledge in understanding the flow of liquid and surface tension applied on the surface of liquid

Waves and vibration:

- To understand the term Sound, types of waves Physics.
- To carry out calculations involving the wave speed, wavelength, frequency and period of a sound wave.
- To describe one difference between light and sound
- To analyse findings to calculate the speed of sound
- To evaluate experimental procedures
- To understand how the human ear works.
- To analyse the range of human hearing

Physics (Hon) paper 2

Course Outcomes

Heat:

Students will be able to:

- Understand basic concept of heat transfer
- Able to do the analytical solving in the process of heat transfer (conduction, convection and radiation)
- Design various types of basic heat exchanger

Thermodynamics:

- Describe basic concepts of Thermodynamics.
- Restate definition of system, surrounding, closed and open system, extensive and intensive properties.
- Calculate absolute and gage pressure, and absolute temperature.
- Calculate changes in kinetic, potential, enthalpy and internal energy.

Physics (Gen & sub)



Course Outcomes

Relativity, Mechanics, properties of Matter :

- Apply the equation of motion to one or two dimensions of the system in order to understand kinematics of the body under the various conditions of applied force
- Apply the knowledge in construction of beams, bridges etc.
- Apply knowledge in understanding the flow of liquid and surface tension applied on the surface of liquid
- Trains the student in basic and advanced concepts in special relativity and introduces the basic ideas up on which general relativity is based on. Also provides in depth training in applications of group theory in relativity. Prepares the student for studying general relativity in future

Waves and Acoustics :

Students will be able to:

- Understand the concepts of mechanics, acoustics and the properties of matter
- Understand physical characteristics of SHM and obtaining solution of the oscillator using differential equations
- Calculate logarithmic decrement relaxation factor and quality factor of a harmonic oscillator
- Use Lissajous figures to understand simple harmonic vibrations of same frequency and different frequencies
- Solve wave equation and understand significance of transverse waves
- Solve wave equation of a longitudinal vibration in bars free at one end and also fixed at both the ends

Thermal physics:

Students will be able to:

- Identify and describe the statistical nature of concepts and laws in thermodynamics, in particular: entropy, temperature, chemical potential, Free energies, partition functions.
- Use the statistical physics methods, such as Boltzmann distribution, Gibbs distribution, Fermi-Dirac and Bose-Einstein distributions to solve problems in some physical systems.
- Apply the concepts and principles of black-body radiation to analyse radiation phenomena in thermodynamic systems.
- Apply the concepts and laws of thermodynamics to solve problems in thermodynamic systems such as gases, heat engines and refrigerators etc.
- Analyse phase equilibrium condition and identify types of phase transitions of physical systems.
- Make connections between applications of general statistical theory in various branches of physics.
- Design, set up, and carry out experiments; analyse data recognising and accounting for errors; and compare with theoretical predictions

Physics (Hons) paper 3



Course Outcomes

Optics:

Students will be able to:

- Gain knowledge on various theories of light
- Acquire skills to identify and apply formulas of optics and wave physics
- Understand the properties of light like reflection, refraction, interference, diffraction etc
- Understand the applications of diffraction and polarization.
- Understand the applications of interference in design and working of interferometers.
- Understand the resolving power of different optical instruments.
- Gain knowledge on working of holography and their applications in various fields.
- Gain knowledge in optical fibre and their applications in communication

Electromagnetic Theory :

- To provide the basic skills required to understand, develop, and design various engineering applications involving electromagnetic fields.
- To lay the foundations of electromagnetism and its practice in modern communications such as wireless, guided wave principles such as fibre optics and electronic electromagnetic structures including those on the sub-micron scale.
- To provide basic laboratory exposure to electromagnetic principles and applications

Physics (Hons) paper 4

Course Outcomes

Electrostatic & Magnetism:

Students will be able to:

- Understand electricity and magnetism on a level that uses standard mathematical tools. Develop a conception of space and time adequate for understanding electrodynamics. Develop and train problem-solving skills.

Current Electricity :

Students will be able to:

- Express the formation and properties of electricity.
- Expresses current, voltage, work and power concepts.
- Explains that voltmeter is connected to the circuit in parallel.
- Explains that ammeter is connected to the circuit in series.
- Describes the relationship between the electric power and work.

Modern physic:

- To understand the difference between Atomic and Molecular spectroscopies.
- Understand the intuitive ideas of the Quantum physics and Nuclear physics.
- Derive Schrodinger time dependent and time independent wave equations
- To understand dual nature of matter



- To gain knowledge on classification of various crystal systems
- Understand the basics of crystallography, x-ray diffraction and Superconductivity.
- Students will develop a comprehension of the current basis of broad knowledge in Modern physics.
- Learners will build on a critical thinking, analytical reasoning, and problem solving skills

Physic (Gen & sub)

Course Outcomes

Electrostatic and Magnetism:

Students will be able to:

- Understand electricity and magnetism on a level that uses standard mathematical tools. Develop a conception of space and time adequate for understanding electrodynamics. Develop and train problem-solving skills.

Current Electricity and Modern physics :

Students will be able to:

- Express the formation and properties of electricity.
- Expresses current, voltage, work and power concepts.
- Explains that voltmeter is connected to the circuit in parallel.
- Explains that ammeter is connected to the circuit in series.
- Describes the relationship between the electric power and work.
- To understand the difference between Atomic and Molecular spectroscopies.
- Understand the intuitive ideas of the Quantum physics and Nuclear physics.
- Derive Schrodinger time dependent and time independent wave equations
- To understand dual nature of matter
- To gain knowledge on classification of various crystal systems
- Understand the basics of crystallography, x-ray diffraction and Superconductivity.
- Students will develop a comprehension of the current basis of broad knowledge in Modern physics.
- Learners will build on a critical thinking, analytical reasoning, and problem solving skills

Optics:

Students will be able to:

- Gain knowledge on various theories of light
- Acquire skills to identify and apply formulas of optics and wave physics
- Understand the properties of light like reflection, refraction, interference, diffraction etc
- Understand the applications of diffraction and polarization.
- Understand the applications of interference in design and working of interferometers.
- Understand the resolving power of different optical instruments.



- Gain knowledge on working of holography and their applications in various fields.
- Gain knowledge in optical fibre and their applications in communication

Physics (Hons) paper – 5

Course Outcomes

Methods of Mathematical physics:

Students will be able to:

- Solve differential equations like Legendre, Bessel and Hermite that are common in physical sciences.
- Solve the different partial differential equations encountered in physical problems and draw inferences from solutions.
- Solve transfer functions in Instrumentation using Laplace transforms.
- Apply Fourier transforms in Holography.
- Apply Matrices in the study of electrical circuits, Quantum Mechanics and Optics.
- Apply the knowledge of Tensors to understand phenomenon like stress and strain.

Classical Mechanics:

Students will be able to:

- Understand basic mechanical concepts related to discrete and continuous mechanical systems and also Cyclic coordinates and conservation theories
- Apply Newton's laws of motion and conservation law of energy, linear and angular momentum to solve advanced problems involving the dynamic motion of classical mechanical system.
- Solve the equations of motion for complicated mechanical systems using the Lagrangian and Hamiltonian formulations of classical mechanics.
- Explore the application of Hamilton's equations in solving the equation of motion of a particle in a central force field , projectile motion of a body

Quantum Mechanics :

Students will be able to:

- Understand and explain the differences between classical and quantum mechanics
- Learn operator formalism for observables and basic commutation relations.
- Solve Schrödinger equation for simple potentials like linear Harmonic oscillator and Hydrogen atoms.
- Understand the space, time and displacement symmetries.
- Evaluate the eigen values of L and J vectors.
- Evaluate CG coefficients for different values of total angular momentum vector.

Physics (Hons) paper -6

Course Outcomes

Statistical physics :



- The student should understand quantum and classical statistical mechanics for ideal systems, and be able to judge when quantum effects are important. The student should understand the connection between microphysics and thermodynamics.

Electronic Thermionics :

- To gain knowledge and evaluate the Boolean expressions, combinational logic circuits and simplifications using karnaugh maps.
- To analyse the operation of decoders, encoders, multiplexers, adders and subtractors.
- To understand the working of latches, flip-flops, designing registers, counters, a/d and d/a converters.
- To acquire knowledge of operational amplifier circuits and their applications.
- To understand different types of crystal structures in terms of the crystal lattice and the basis of constituent atoms.
- To understand the theory of X-ray diffraction in the reciprocal lattice (k-space) formalism.
 Apply the theory of lattice vibrations (phonons) to determine thermal properties of solids.
- Study the problem of electrons in a periodic potential, examine its consequence on the band-structure of the solids.
- To gain knowledge about the experimental techniques for crystal growth from solution.

Physics (Hons) paper – 7

Course Outcomes

Plasma & classical Electrodynamics:

- Achieve an understanding of the Maxwell's equations, role of displacement current, gauge transformations, scalar and vector potentials, Coulomb and Lorentz gauge, four-vectors, mathematical properties of the spacetime in special relativity, matrix representation of Lorentz transformation, covariance of electrodynamics, and transformation of electromagnetic fields.
- Review the retarded potentials, potentials due to a moving charge, Lienard Wiechert potentials, electric and magnetic fields due to a moving charge; power radiated Larmor's formula and its relativistic generalization. Students will have an understanding of the covariant formulation of electrodynamics and the concept of retarded time for charges undergoing acceleration.
- Student understands to different types of radiated emission like Bremsstrahlung: emission from single-speed electrons, thermal Bremsstrahlung emission and absorption, Synchrotron radiation: spectrum of synchrotron radiation, spectral index for power law electron distribution, transition from Cyclotron to Synchrotron emission, Cherenkov radiation
- Student will be able to learn Plasma physics, Debye shielding phenomenon and criteria for plasma, motion of charged particles in electromagnetic field; Uniform E & B fields, Electric field drift, Non-uniform magnetostatic field, Gradient B drift, Parallel acceleration and magnetic mirror effect, Curvature drift, adiabatic invariants.
- Students have good Understanding of Elementary concepts of plasma kinetic theory, the Boltzmann equation, the basic plasma phenomena, plasma oscillations. Fundamental equations of magneto-hydrodynamics (MHD), Hydrodynamics Waves; Magneto sonic and Alfvén waves, Magnetic viscosity and magnetic pressure, plasma confinement schemes

Solid state physics:

Students will be able to:



- Understand different types of crystal structures in terms of the crystal lattice and the basis of constituent atoms.
- Understand the theory of X-ray diffraction in the reciprocal lattice (k-space) formalism.
- Apply the theory of lattice vibrations (phonons) to determine thermal properties of solids.
- Study the problem of electrons in a periodic potential, examine its consequence on the band-structure of the solids.
- Gain knowledge about the experimental techniques for crystal growth from solution and melt

Physics of Atoms, Molecule and Nuclei :

Students will be able to:

- Analyse both experimental and theoretical working methods in atomic and molecular physics for making correct evaluation and judgments.
- Develop analytical, laboratory and computing skills through problem solving, laboratory & computer based exercises which involve the applications of atomic and molecular physics.
- Carry out experimental and theoretical studies on atomic and molecular physics with focus on structure & dynamics of atoms and molecules.
- Account for theoretical models, terminology & working methods used in atomic and molecular physics.
- Successfully apply the theoretical techniques presented in course to practical problems.
- Describe in oral and written form the observations in atomic and molecular physics which led to the modern quantum physics.
- Motivate the necessity of using quantum mechanics calculations for describing atomic and molecular processes.
- Explain how signatures of the quantum physics are seen in atomic- and molecular physics experiments.
- Understand the basic concepts of most of the commercially available lasers.
- Design experimental setups in order to characterize a laser in the time or the frequency domain.
- Know the basic principles of nonlinear optics.
- Carry out numerical calculations of simpler processes for free atoms and molecules and their interactions with electric and magnetic fields.
- Understand the literature on a subject not developed during the lecture but related to laser Optogalvanic spectroscopy or applications of lasers, fluorescence spectroscopy and Microwave Spectroscopy.
- Describe, in oral and written form, and analyse example of experiments which could answer a given scientific question within the basic atomic and molecular physics
- Describe basic properties of nuclei, nuclear interactions, nuclear structure and reactions.
- Identify the strengths and limitations of various nuclear models.
- Relate theoretical predictions and measurements of Quantum mechanical reasoning in classification of processes in subatomic world.
- Apply the knowledge of basic laws of conservation and momentum in the determination of particle properties and properties of processes in the subatomic world.
- Work on elementary problem solving in nuclear and particle physics, and relating theoretical predictions and measurement results.
- Demonstrate the ability to critically evaluate the results in nuclear and particle physics.



11.SANSKRIT HONOURS

Part:-1

Paper– I Classical Sanskrit Literature (Poetry)

Outcome

The course intends to give an understanding of literature, through which students will be able to

1. Appreciate the development of Sanskrit Literature
2. Negotiate texts independently with grammatical analysis and poetic excellence.
3. Acquainted with the work: Raghuvamsa and Kumarsambhavam of the Great poet Kalidasa, Kiratarjuniam of Bharavi and Neetishatakam of Bhartrihari.
4. Know about origin and development of different types of Mahakavya and Geetikavya.

Paper– II

Outcome

After completion of the course, the student will be able to understand

1. Acquainted with the work: Kiratarjuniam, Shishupalvadh and Meghdut.

Sanskrit (Sub)

Sanskrit Translation

Outcome

After completion of the course, the student will be able to understand

1. The system of Traditional grammar.
2. Sanskrit vocabulary and grammatical construction.
3. Sangya Prakarana, Sandhi Prakarana and Kritya Prakarana according to Laghusiddhantkaumadi.
4. Procedures of formation of Sanskrit words.

Sanskrit (General)

Outcome

After completion of the course, students will get a proper sense of

1. The journey of Sanskrit literature from Vedic literature to Purana.
2. Special features of Sanskrit Puranas & original source of our cultural heritage.
3. An outline of different shastric traditions of Vyakarana.
4. The different genres of Sanskrit Literature like Ramayana and Mahabharata.

Part:-2

Paper IV

Outcome:-

After the completion of the course

1. Capacity for creative writing and literary appreciation will be developed.
2. Students would be able to learn composition and other related information based on Laghu Siddhantakaumudi Vibhaktyartha Prakarana.
3. Students would be able to write an essay in Sanskrit, & their language-skill will be developed.
4. Appreciate the work of Shkunasopadesh, Daskumarchrit, and Seema : Dr. Rajendra Prasad.

Paper III

Outcome:-

Students would be able to learn

- The inner structure of Sanskrit drama by themselves.
- The famous drama as Abhigyanashakuntalam of Kalidasa and Mrichchhkatik -with a view to giving knowledge of ancient Indian dramatic system.



- These three most famous dramas of Sanskrit literature represent three stages in the growth of Sanskrit drama.
- Origin and development of Sanskrit Drama.

Sanskrit (Sub)

Sanskrit Translation

Outcome:

The students will expose to

- The rich & profound tradition of modern creative writing in Sanskrit, enriched by new genres of writing.
- Modern Sanskrit Drama.
- Modern Sanskrit Gadya Kavya.
- General survey of Modern writers and poets.
- Special features of Sanskrit Puranas & original source of our cultural heritage.
- An outline of different shastric traditions of Vyakarana.
- The different genres of Sanskrit Literature like Ramayana and Mahabharata.

Sanskrit (General)

Outcome

The students will expose to

- The rich & profound tradition of modern creative writing in Sanskrit, enriched by new genres of writing.
- Modern Sanskrit Drama.
- Modern Sanskrit Gadya Kavya.

Part:-3

Paper V

Outcome:-

Students will be able to know

- Various types of vedic texts.
- Saṁhitā and Brāhmaṇa.
- Vedic Grammar.
- Upaniṣad, namely, Kathha, where primary Vedānta-view is propounded.

Paper V

Outcome:-

Students gain the knowledge of

- Samas Prakarana (Compound) according to Laghusiddhantkaumadi.
- Types and examples of Samas. Formation of words.
- Sangya vachak shabdas according to Laghusiddhantkaumadi

Paper VI

Outcome:-

Students gain the knowledge of

- History of Sanskrit literature
- Classical literature

Paper VI

Outcome:-

Students gain the knowledge of

- Writing an essay in Sanskrit
- Translating Hindi to Sanskrit
- Precise writing

Sanskrit (General)

Outcome

The students will expose to Kritaarjunium of Bharvi, Kadambari of Vanbhatth and translation.



ZOOLOGY HONOURS

Part -1

Paper-1 Non-Chordates

Outcomes: -

On the completion of the course students will

1. Understand the general characteristics of non-chordate groups of organisms.
2. Acquire knowledge regarding classification of the taxa with examples.
3. Develop an understanding of important phenomena associated with each taxon.
4. Acquire skills in identifying representative species of groups studied.

Paper-2 Ecology, Animal Behaviour and Biometry

Outcomes: - On completion of the course the student should be able to

1. Know the evolutionary and functional basis of animal ecology.
2. Understand what makes the scientific study of animal ecology a crucial and exciting endeavour.
3. Engage in field-based research activities to understand well the theoretical aspects taught besides learning techniques for gathering data in the field.
4. Analyse a biological problem, derive testable hypotheses and then design experiments and put the tests into practice.
5. Solve the environmental problems involving interaction of humans and natural systems at local or global level.
6. Know the current status and conservation strategies for wildlife conservation and management.

Practical

Outcomes: - On completion of the course the student should be able to know the general plan and functioning of different components of the systems in the body.

ZOOLOGY (Subsidiary& General)

Group (a) Non- Chordates

Outcomes:- On the completion of the course students will



1. Understand the general characteristics of non-chordate groups of organisms.
2. Acquire knowledge regarding classification of the taxa with examples.
3. Develop an understanding of important phenomena associated with each taxon.
4. Acquire skills in identifying representative species of groups studied.
5. Students gain knowledge and skill in the fundamental of animal sciences, understanding the complex interactions among various living organisms.

Group (b) Cell Biology, Genetics and Evolution

Outcomes:-

Upon completion of the course, students should to be able to: ·

1. Understand fundamental principles of cell biology.
2. Explain structure and functions of cell organelles involved in diverse cellular processes.
3. Appreciate how cells grow, divide, survive, die and regulate these important processes.
4. Comprehend the process of cell signaling and its role in cellular functions.
5. Have an insight of how defects in functioning of cell organelles and regulation of cellular processes can develop into diseases.
6. Learn the advances made in the field of cell biology and their applications.
7. Have a deeper understanding of the varied branches of the biological sciences like microbiology, evolutionary biology, genomics and metagenomics

(PRACTICAL)

Outcomes: - Student will gain practical knowledge of cytology, pheretima.

Part -2

Paper-3 Chordata

Outcomes: - On completion of the course students will be able

1. To describes the general characters and affinities of Cephalochordata.
2. To know the general characters and affinities of Hemichordata.
3. To understand the general characters and affinities of Urochordata
4. To describes the salient features and classification of Phylum chordata and their origin.
5. To know classification of phylum Pisces, Accessory respiratory organs and Migration.



6. To classify phylum Amphibia and explain their adaptive features and parental care.
7. To classify the phylum Reptilia and biting mechanism of poisonous snakes .
8. To describe the phylum Aves and migration and flight adaptation in birds.
9. To understand the Phylum Mammalia and egg laying mammals.
10. To understand the Origin of Primates and adaptations of aquatic mammals.

Paper-4 Comparative Vertebrate, Anatomy and Embryology

Outcomes: -

Upon completion of the course, students should be able to:

1. Explain comparative account of the different vertebrate systems.
2. Understand the pattern of vertebrate evolution, organization and functions of various systems.
3. Learn the comparative account of integument, skeletal components, their functions and modifications in different vertebrates.
4. Understand the evolution of heart, modification in aortic arches, and structure of respiratory organs used in aquatic, terrestrial and aerial vertebrates; and digestive system and its anatomical specializations with respect to different diets and feeding habits.
5. Learn the evolution of brain, sense organs and excretory organs to a complex, highly evolved form in mammals;
6. Learn to analyze and critically evaluate the structure and functions of vertebrate systems, which helps them to discern the developmental, functional and evolutionary history of vertebrate species.
7. Understand the importance of comparative vertebrate anatomy to discriminate human biology.
8. Familiar with various stages involved in the developing embryo.
9. Apply the knowledge to collect various Biological data.
10. Understand the initial developmental procedures involved in Amphioxus, frog and chick.
11. Familiar with types of placenta.
12. Explain various Prenatal Diagnosis.
13. Familiar with the principle of developmental biology.
14. Familiar with various Techniques and tools of Embryology.

(PRACTICAL)

Outcomes: - Student will gain practical knowledge of venous system, mounting and spotting.



ZOOLOGY (Subsidiary & General)

Group (a) Chordates

Outcomes: - On completion of the course students will be able

1. To describes the general characters and affinities of Cephalochordata.
2. To know the general characters and affinities of Hemichordata.
3. To understand the general characters and affinities of Urochordata.
4. To describes the salient features and classification of Phylum chordata and their origin.
5. To know classification of phylum Pisces, Accessory respiratory organs and Migration.
6. To classify phylum Amphibia and explain their adaptive features and parental care.
7. To classify the phylum Reptilia and biting mechanism of poisonous snakes.
8. To describe the phylum Aves and migration and flight adaptation in birds.
9. To understand the Phylum Mammalia and egg laying mammals.
10. To understand the Origin of Primates and adaptations of aquatic mammals.

Group (b) Embryology

Outcomes: - Upon completion of this course, the students will be able to:

1. Familiar with various stages involved in the developing embryo.
2. Apply the knowledge to collect various Biological data.
3. Understand the initial development al procedures involved in Amphioxus, frog and chick.
4. Familiar with types of placenta.
5. Explaining the Structural features and biological importance of different class of carbohydrates, protein and fat.
6. Understand the basic concept of hormones, structure and function of endocrine glands in mammals.

(PRACTICAL)

Outcomes: - Student will gain practical knowledge of venous system, mounting, spotting, endocrinology and embryology.

Part -3

Paper-5 Biochemistry, Physiology, Endocrinology

Outcomes: -



1. In depth understanding of structure of biomolecules like proteins, fats and carbohydrates.
2. The thermodynamics of enzyme catalyzed reactions.
3. To know various physiological processes of animals.
4. Understand the basic concept of hormones, structure and function of endocrine glands in mammals.

Paper-6 Cell Biology, Genetics and Economic Zoology

Outcomes: -

Upon completion of the course, students should to be able to: -

1. Understand fundamental principles of cell biology.
2. Explain structure and functions of cell organelles involved in diverse cellular processes.
3. Appreciate how cells grow, divide, survive, die and regulate these important processes.
4. Comprehend the process of cell signaling and its role in cellular functions.
5. Have an insight of how defects in functioning of cell organelles and regulation of cellular processes can develop into diseases.
6. Learn the advances made in the field of cell biology and their applications.
7. Have a deeper understanding of the varied branches of the biological sciences like microbiology, evolutionary biology, genomics and metagenomics.
8. Gain knowledge of the basic principles of inheritance.
9. Analyse pedigree leading to development of analytical skills and critical thinking enabling the students to present the conclusion of their findings in a scientific manner.
10. Know the mechanisms of mutations, the causative agents and the harmful impact of various chemicals and drugs being used in day to day life.
11. Find out the effects of indiscriminate use of various chemicals, drugs or insecticides in nature by studying their effect on various bacterial species in soil and water samples from different industrial or polluted areas.
12. Acquaint the knowledge about basic procedure and methodology of integrated animal rearing.
13. Students can start their own business i.e. self- employments.
14. Get employment in different sectors of Applied Zoology.

Paper-7 Evolution, Zoogeography, Palaeozoology and Histology

Outcomes: - On completion of the course the student should be able to



1. Know the evolutionary and functional basis of animal ecology.
2. Understand what makes the scientific study of animal ecology a crucial and exciting endeavour.
3. Engage in field-based research activities to understand well the theoretical aspects taught besides learning techniques for gathering data in the field.
4. Analyse a biological problem, derive testable hypotheses and then design experiments and put the tests into practice.
5. Solve the environmental problems involving interaction of humans and natural systems at local or global level.
6. Know the current status and conservation strategies for wildlife conservation and management.
7. Explain the liver, spleen and kidney of mammals.

Paper-8 (PRACTICAL)

Outcomes: - Student will gain practical knowledge of biochemistry, physiology and endocrinology.

General

Outcomes: -

1. Acquaint the knowledge about basic procedure and methodology of integrated animal rearing.
2. Students can start their own business i.e. self- employments.
3. Get employment in different sectors of Applied Zoology.



13.URDU HONOURS

B.A 1st Year

Paper 1:

Course Outcome:

1. At the completion of this course, the students will be able to understand and appreciate the prose Urdu literary traditions.

Paper2:

Course Outcome:

1. At the completion of this course, the students will be able to understand and appreciate the poetry Urdu literary traditions.

Composition Paper

Course Outcome:

1. At the completion of this course, the students will be able to understand and appreciate the the work of Shilbi, Wahab Ashrafi, Prem Chand and Sir Syed Ahmad Khan Urdu literary traditions.

B.A 2nd Year

Paper 3:

Course Outcome:

1. At the completion of this course, the students will be able to understand and appreciate the the work of Anis O – Dabir 's Intekhab-e-Marashi Urdu literary traditions.

Paper4:

Course Outcome:

1. At the end of this course, the students will be able to have in-depth knowledge and able to appreciate the basic changes and transition in modern Urdu Ghazal.

Subsidiary paper

Course Outcome:

1. At the end of this course, the students will be able to have in-depth knowledge and able to appreciate the basic changes and transition in modern Urdu Ghazal & Nazams.

Composition Paper

Course Outcome:

1. Understanding the Adabiyat.



B.A 3rd Year

Paper 5:

Course Outcome:

1. At the end of this course, the students will be able to have in-depth knowledge and able to appreciate the history of vedic literature and translate into Hindi or English.

Paper 6:

Course Outcome:

1. At the end of this course, the students will be able to have in-depth knowledge about language science.

Paper 7:

Course Outcome:

1. At the end of this course, the students will be able to have in-depth knowledge about history of Sanskrit Epic as- Vaman, Vishwanath and Jagannath etc.

Paper 8:

Course Outcome:

1. At the end of this course, the students will be able to write passage, essay and translate Sanskrit into Hindi.

General

Course Outcome:

1. At the end of this course, the students will be able to translate both Sanskrit into Hindi or English.
2. To appreciate the work of Bharati's Kiratarjuniam and Vanbhata's Kadambari.



14.SOCIOLOGY HONOURS

B.A 1st Year

Paper 1: Concept and Principles of sociology

Course Outcome:

1. Student will be able to explain social facts and society relates concepts.
2. Student will be able to define and explain social concepts, social facts and student will be able to express empirical observations with sociology concepts.
3. Student will be able to define and explain main characteristics of social institutions.
4. Student will be able to convey the historical development of sociology.
5. It also provides a foundation for the other more derailed and specialized course in sociology.

Paper 2: Indian Society and Culture

Course Outcome:

1. The mandate of the course is to introduce the society and culture of India.
2. This paper is expected to bring familiarity in a student about Indian Society
3. It will present a comprehensive, integrated and empirically – base d profile of Indian society.
4. This paper focuses on the culture, personality, joint family, Varna system, Vaste system & Panchayti Raj.

Subsidiary & Pass:- Principal of sociology

Course Outcome:

1. Student will be able to explain social facts and society relates concepts.
2. Student will be able to define and explain social concepts, social facts and student will be able to express empirical observations with sociology concepts.
3. Student will be able to define and explain main characteristics of social institutions.
4. Student will be able to convey the historical development of sociology.

B.A 2nd Year

Paper 3: Concept and Principles of sociology

Course Outcome:

The objective of this course to introduce the social psychology.

1. Explaining Nature, Scope and subject matter of social psychology, relationship with other social sciences.
2. Describe leadership meaning and types.



3. Understand definitions, formation and changes in attitude.
4. Explain Public opinion and mean of public opinion.
5. Describe, Crowd and deference between group and crowd.

Paper 3: Social Research

Course Outcome:

1. The course is an introductory course on how research is actually done.
2. Field work is an applied part of social research methods.
3. This paper aims to against students with empirical field data collection, analysis and writing analytical and standard dissertation or research report in sociology.
4. Student will able to learn about how to collect, analyze data and how to write a field report.

Subsidiary:- Anthropology

Course Outcome:

The course aims to introduce tribal society in India.

1. Elaborate on meaning, nature and scope of social Anthropology.
2. Explain anthropological thinkers, Evolutionary and functional thinkers.
3. Analyse the social institutions in terms of types and functions.
4. Understand tribal economy, Law and justices.

General:- Indian Social System & Institution

Course Outcome:

1. This paper will provide the knowledge about status of women in Bihar.

B.A 3rd Year

Paper 5: History of Social Thought

Course Outcome:

The mandate of the course is to introduce the through of pioneers sociologist.

1. Asses social and sociological theories, Phenomenon and perspectives, Influence of industrial and French revolution on sociological through and contributions of August Comte.
2. Analyse life & Major works of Karl Mark.
3. Explain contributions of Emile Durkheim.
4. Describe the contribution of Herbert Spence Vilfredo Pareto.
5. Elaborate on contributions of Max Waber.

Paper 6: Rural Sociology



Course Outcome:

The objective of this course is to understand about the rural scenario.

1. Describing Nature and Scope of rural sociology.
2. Develop on understanding of Rural social system, concept of village, characteristics of rural social society.
3. Elaborating on Rural family concept and types.
3. Understand the caste system and its characteristics.
4. Understanding Panchayati Raj System.
5. Describe rural reconstruction and planning

Paper 7: Group (a) Social Pathology

Course Outcome:

1. To learn the nature and scope of Social Pathology.

Paper 7: Group (b) Sociology of Tribes

Course Outcome:

The objective of this course is to give clear understanding about the tribal society studying the course student will be able to.

1. Introduce them with the concept of tribe.
2. Develop an understanding about classification of tribal people.
3. Define socio culture profile: Ethic and cultural diversity.
4. Learn about tribal society, family, marriage, kinship and languages.
5. Know the problems faced by the tribes and social mobility and change.
6. Learn about tribal movement

Paper 7: Group (c) Social Demography

Course Outcome:

1. To know concept of Population policy

Paper 7: Group (d) Industrial Sociology

Course Outcome:

The course aims to introduce industrial and society.

1. Describe the nature and scope of industrial sociology, growth of industrialization, industrial revolution and its impact on society.
2. Understand labour meaning, problems.
3. Understand impact of globalization on industry and labour.
4. Describe Trade Union Movement in India.



5. Worker Participation in Management and Collective Bargaining.

Paper 8: Survey

Course Outcome:

1. To know how to prepare a report.

Composition Paper Anthropology

Course Outcome:

The course aims to introduce tribal society in India.

1. Elaborate on meaning, nature and scope of social Anthropology.
2. Explain anthropological thinkers, Evolutionary and functional thinkers.
3. Analyse the social institutions in terms of types and functions.

General

Indian Social System & Institution

Course Outcome:

1. Students will gain the depth knowledge about Indian social institutions, caste system, panchayati raj, community development and impact of Islam and Western Culture on Indian social institutions.



15.HOME SCIENCE HONOURS

B.A 1st Year

Paper 1: Food and Nutrition

Course Outcome:

The students would be able to:

1. Recognize various resources available in home/ community/institution
2. Apply human and non-human resources for better life style
3. Interpret the concept of food and nutrition
4. Acquire and use the knowledge of nutrients
5. Work in community development activities.

Paper 2: Dietetics

Course Outcome:

The students would be able:

1. To understand the mechanism adopted by the human body for regulation of metabolic pathway.
2. To know about various diseases and nutritional dietary requirements.
3. To develop knowledge and understanding nutritional problems and their management
4. To know the various methods for assessment of health status.

Practical

Course Outcome:

1. Students will be able to prepare a record book of meal planning, high energy, high protein recipes and diets for patients.

Subsidiary (a) Food and Nutrition

Course Outcome:

This course will enable the student to

1. Understand the functions of food and the role of various nutrients, their requirements and the effects of deficiency and excess (in brief).
2. Learn about the structure, composition, nutritional contribution and selection of different foodstuffs.
3. Be familiar with the different methods of cooking, their advantages and disadvantages. 4. Develop an ability to improve the nutritional quality of food.

(b) Home Management

Course Outcome:



1. Students will be able to understand the concept of home management.
2. Students will be able to plan the work of the household, labour saving devices and maintenance.

(c) Extension Education

Course Outcome:

Upon completion of this course, the students will be able to:

1. Explain and analyse the widening concept of extension education in India.
2. Recognize the importance of rural Leadership in bringing about planned change in human behaviour for developing community.
3. Plan, implement and evaluate an extension programme.

Practical

Course Outcome:

1. Students will gain the practical knowledge of cooking, home management, and extension education.

Pass

Course Outcome: (a) Food and Nutrition

The students would be able to:

1. Recognize various resources available in home/ community/institution
2. Apply human and non-human resources for better life style
3. Interpret the concept of food and nutrition
4. Acquire and use the knowledge of nutrients
5. Work in community development activities.

Course Outcome: (b) Home Management

1. Students will be able to understand the concept of home management.
2. Students will be able to plan the work of the household, labour saving devices and maintenance.

Practical

Course Outcome:

1. Students will acquire the practical knowledge of cooking and home management.

B.A 2nd Year

Paper 3: Resource Management

Course Outcome:

The students would be able to:



1. Understand the various methods and techniques of human resource planning and human resource audit.

2. Gain knowledge about consumer economics and foundation of art.

Paper 4: Textile and Clothing

Course Outcome:

The students would be able to:

1. Develop and understanding of different types at fibres, yarns and finishes.
2. Gain practical knowledge of dyeing, printing and weaving.
3. Develop the skills of making paper pattern for different types of garments.

Practical

Course Outcome:

1. Students will develop their skills of traditional embroideries of different states, flower and furniture arrangement.

Subsidiary

Course Outcome: (a) Textile and Clothing

The students would be able to:

1. Develop and understanding of different types at fibres, yarns and finishes.
2. Gain practical knowledge of dyeing, printing and weaving.
3. Develop the skills of making paper pattern for different types of garments.

Course Outcome: (b) Child Development

This course will enable the students to:

1. Understand the meaning and importance of mother crafts and child care.
2. Understand the definition and scope of child development
3. Understand various developments like physical, motor, emotional, language, social and cognitive from birth to adolescence.
4. Understand the importance of play.
5. Understand gifted children and problem children and concept of juvenile delinquency.

Course Outcome: (c) Family Relationship

This course will enable the students to:

1. Explain the origin and functions of family.
2. Explain the types, functions and adjustment in marriage.
3. Analyse the parent child relationship and problems of aged.



Practical

Course Outcome:

1. To develop the skills of tailoring and embroidering.

General

Course Outcome: (a) (a) Textile and Clothing

The students would be able to:

1. Develop and understanding of different types at fibres, yarns and finishes.
2. Gain practical knowledge of dyeing, printing and weaving.
3. Develop the skills of making paper pattern for different types of garments.

Course Outcome: (b) Child Development

This course will enable the students to:

1. Understand the meaning and importance of mother crafts and child care.
2. Understand the definition and scope of child development
3. Understand various developments like physical, motor, emotional, language, social and cognitive from birth to adolescence.
4. Understand the importance of play.
5. Understand gifted children and problem children and concept of juvenile delinquency.

B.A 3rd Year

Paper 5: Human Development

Course Outcome:

At the end of the course the student should be able to:

1. Explain the need and the importance of studying human growth and development across life span.
2. Identify the biological and environmental factors affecting human development.
3. Describe the characteristics, needs and developmental tasks of different stages in the human life cycle.
4. Discuss the special features characteristic of each stage and its impact on the next stage

Paper 6: Extension Education & Personal improvement

Course Outcome:

Upon completion of this course, the students will be able to:

1. Explain and analyse the widening concept of extension education in India.



2. Recognize the importance of rural Leadership in bringing about planned change in human behaviour for developing community.
3. Plan, implement and evaluate an extension programme.
4. To extrapolate indicators of development with emphasis to women.
5. To distinguish gender equality and gender mainstreaming in the society.

Paper 7: Human Development

Course Outcome: Upon completion of this course, the students will be able to:

1. Understand the functions of food and the role of various nutrients, their requirements and the effects of deficiency and excess.
2. Learn about the structure, composition, nutritional contribution and selection of different foodstuffs.
3. Be familiar with the different methods of cooking, their advantages and disadvantages.
4. Develop and able to improve the nutritional quality of food.

Paper 8: Practical

Group (a)

Course Outcome:

1. Analyzing and preparing a report on child caring.

Group (b)

Course Outcome:

1. Analyzing and preparing charts and posters on extension education.

Group (c)

Course Outcome:

1. Planting and improving greenery.
2. Managing and recycling of domestic garbages.

General

Course Outcome: Extension Education

Upon completion of this course, the students will be able to:

1. Explain and analyse the widening concept of extension education in India.
2. Recognize the importance of rural Leadership in bringing about planned change in human behaviour for developing community.
3. Plan, implement and evaluate an extension programme.

Course Outcome: Family Relationship

This course will enable the students to:

ESTD : 1952



Raj Narain College, Hajipur, (Vaishali)
A NAAC ACCREDITED INSTITUTION (Grade B)
(With 'Centre of Excellence' Status of Govt. Of Bihar)
A Constituent Unit of B.R.A. Bihar University, Muzaffarpur



1. Explain the origin and functions of family.
2. Explain the types, functions and adjustment in marriage.
3. Analyse the parent child relationship and problems of aged.



16.GEOGRAPHY HONOURS

B.A 1st Year

Paper 1: Physical Geography

Course Outcomes:

1. After this lesson the students will become able to acquaint themselves with nature and scope of oceanography and distribution pattern of land, sea and oceans.
2. They will have knowledge of bottom relief of oceans, their waves and current in relation to origin, type, characteristics and impact of ocean waves and current on environment.
3. Students will also have knowledge about ocean resources, their types and distribution and their influences upon mankind.
4. The learners will have the basic concepts of climatology and its geographical significance along with knowledge of earth's atmosphere in respect to structure, composition and characteristics.
5. A fair knowledge about elements and factors influencing climate.
6. Have a concept of distribution of temperature over earth surface, global pressure belts and wind system, formation and characteristics of cyclones.

Paper 2: Geography of Asia

Section – A

Course Outcomes:

1. To explain the structure of Asia, nature, power resources of Asia.

Section – B

Course Outcomes:

1. To discuss the physical regions, agriculture, industrial development of China and Japan.
2. To develop the concept of Geographical account of neighbor countries of India.

General& Subsidiary

Physical and Economic geography

Course Outcomes:

1. After this lesson the students will become able to acquaint themselves with nature and scope of oceanography and distribution pattern of land, sea and oceans.



2. They will have knowledge of bottom relief of oceans, their waves and current in relation to origin, type, characteristics and impact of ocean waves and current on environment.
3. Students will also have knowledge about ocean resources, their types and distribution and their influences upon mankind.
4. The learners will have the basic concepts of climatology and its geographical significance along with knowledge of earth's atmosphere in respect to structure, composition and characteristics.
5. A fair knowledge about elements and factors influencing climate.
6. Have a concept of distribution of temperature over earth surface, global pressure belts and wind system, formation and characteristics of cyclones.
7. Focus on building theories about spatial arrangement and distribution of economic activities.
8. Explain the importance of economic geography in analyzing the ways societies and economic works.
9. Discuss and critically evaluate these concepts and theoretical approaches.
10. Explain and apply key concepts and theoretical approaches in economic geography.

Practical

Course Outcomes:

1. To acquire the knowledge of tropical maps and weather maps.

2nd Year

Paper 3: India and Bihar

Course Outcomes:

1. Students will know about their own countries land formation, climate and natural vegetation.
2. They will understand the economic resources of India and Bihar.
3. They will understand the social distribution of population of their country.
5. Develop an idea about regionalization of India Bihar.

Paper 4: Section – A

Economic Geography

Course Outcomes:

1. Understand the concept of economic activity, factors affecting location of economic activity.
2. Gain knowledge about different types of primary activities.



3. Develop an idea about different types of secondary activities.

4. Acquire knowledge about different types of tertiary activities.

Section – B

Resource Geography

Course Outcomes:

1. At the end the course student should learn importance of natural resources
2. Conservation methods and awareness about community participation.
3. Assessment of role of national and international efforts to mitigate resource problems.

Practical

Course Outcomes:

1. Students will gain the knowledge of cartograms, projection and statistics.

Subsidiary

Geography of India

Course Outcomes:

1. Students will know about their own countries land formation, climate and natural vegetation.
2. They will understand the economic resources of India and Bihar.
3. They will understand the social distribution of population of their country.
5. Develop an idea about regionalization of India Bihar.

Practical

Course Outcomes:

1. Students will gain the knowledge of map projection and statistics.

3rd Year

Paoer-5 Geographical thought & three Southern Continents

Course Outcomes:

1. Perceive the evolution of the philosophy of Geography.
2. Appreciate the contribution of the thinkers in Geography.
3. Give power point presentations on different schools of geographical thought.
4. Discussing the evolution of geographical thought from ancient to modern times.



5. Establishing relationship of Geography with other disciplines and man-environment relationships. 6. Analyzing modern and contemporary principles of Empiricism, Positivism, Structuralism, Human and Behavioral Approaches in Geography.

7. Another part helps students in developing their quantitative application in geographical study which gives more accuracy in any geographical enquiry which can further helps students in conducting research activities.

8. Understanding the Structure, Physiography, Climate and Vegetation of Africa, Australia and South America and Geographical account of selected regions, viz. Nile Basin, Murray Darling Basin, New South Wales, Argentina-Pampas, Brazil.

Paoer-6: Human Geography

Course Outcomes:

Upon completion of the course students will be able to understand:

1. Human activities in different environments.
2. Evolution of human civilization and study of the races; Major Cultural Regions of the World.
3. Patterns of Population distribution; Trends of Population growth; Demographic Transition and Optimum Population; factors of Population mobility-internal and international, rural and urban.
4. Evolution of Rural settlements; types and patterns of rural settlements in India; Locational and Functional classifications of towns; Urban growth in India; Problems of Urbanization, with special reference to India.
5. Concept and approaches of Environmental Geography; Ecology and Ecosystem; Environmental Policies and Management -Air and Water Pollution.

Paoer-7: Group (a) Population Geography

Course Outcomes:

Upon completion of the course students will be able to understand:

1. Meaning, scope of Population Geography, Science of Demography, Recent growth with special reference to developed and trends of Population developing countries, Sources of Population data, Methods of Population forecasting.
2. Dynamics of population change- Fertility, Mortality, National and International migration, Demographic Transition and Optimum Population.
3. Distribution and Growth patterns of world population problems caused by differential population policy in India.
4. Population composition - Occupation, Literacy, Age and Sex, Rural-Urban composition.



5. Growth of India's Population distribution and density, Rural- urban movement of population, problems of Urbanization, Urban- Population characteristic in India.

Group (b) Geology of India

Course Outcomes:

Upon completion of the course students will be able to understand:

1. The Scope and function of Geology, Standard Stratigraphical scale Indian Stratigraphical Scale.
2. The characteristics of Petrological Classification and distribution economic importance of Dharwar, Vindhyan, Gondwana Deccan, Lava and Tertiary systems, Cuddapah.
3. Classification of rocks- Igneous, sedimentary, metamorphic rocks, metamorphism.
4. Geological Evolution of Himalayas. Chotanagpur, Rajmahal, Highland, Deccan Lava, Aravali.

Group (c) Land Use and Agriculture

Course Outcomes:

1. To familiarize the students with concept, origin, and development of agriculture; and to examine the role of agricultural determinants towards changing pattern of crops, specialization, intensity, productivity.
2. To familiarize the students with the application of various theories models and classification schemes of cropping pattern and productivity.
3. To discuss the environmental, technological and socioeconomic issues in agricultural sector with special reference to India and world.

Group (d) Cartography Map Making

Course Outcomes:

1. To train the students in the art of representing parallels and meridians on the plain surface. The techniques of surveying and map projections necessary for accurate geographical positioning and preparing physical plans of an area also form parts of the practical exercises.

Group (e) Political Geography

Course Outcomes:

Upon completion of the course students will be able to understand:

1. Understand various approaches to study Political Geography and familiarize major schools of thought.
2. Classify physical and human elements of state in a geographical scenario.



3. Acquires knowledge about different forms of governance and changing pattern of world powers.
4. Critically examine geo-political significance of India and understand the concept of Unity in Diversity.

Group (f) Regional Planning

Course Outcomes:

Upon completion of the course students will be able to:

1. Understand and identify regions as an integral part of geographical study.
2. Appreciate the varied aspects of development and regional disparity, in order to formulate measures of balanced development.
3. Analysing the concept of regions and regionalization.
4. Studying typical physiographic, planning, arid and biotic regions of India. Understanding the detailed geography of India.
5. Gain knowledge about definition of region, evolution and types of regional planning. Develop an idea about choice of a region for planning.

Group (g) Urban Geography and Planning

Course Outcomes:

Upon completion of the course students will be able to:

1. Understand the nature, scope, approaches and recent trends in Urban Geography.
2. Temporal analysis of urban growth using census data.
3. Trace the origin of urban places over time and analyse the factors, stages and characteristics of these places.
4. Analyse the theories of urban evolution and growth, Hierarchy of urban settlements.

Group (h) Racial and Tribal Geography

Course Outcomes:

Upon completion of the course students will be able to:

1. Understand the concept of race, tribes of India and Bihar.

Paper-8 Practical

Course Outcomes:

1. Students will be able to interpret the geological sheet.

General

Geography of Asia

Course Outcomes:

1. To explain the structure of Asia, nature, power resources of Asia.



17.B.COM. (HONOURS)

Part – 1

Financial accounting (Hons.)

Course Outcomes:

- Acquire the basic concepts of accounting terms
- Exemplify to prepare and analyse the financial statement

Auditing (Hons.)

Course Outcomes:

- It provides students with a sound understanding of fundamental auditing concepts and procedures and the application of auditing standards

Business organizations (Hons.)

Course Outcomes :

- Design the corporate organizational structure.
- Make critical business processes more efficient and effective.
- Surpass the functional barriers of a management by functions.
- Share the powers and responsibilities within the company.

Company accounts (Hons.)

Course Outcomes:

- To understand how to communicate financial information to parties outside the business organization like equity investors, creditors, employees, suppliers and clients.
- To help learners to acquire conceptual knowledge of corporate accounting system and to learn the techniques of preparing the financial statements of companies.

Business organizations (Hons.)



Course Outcomes:

- Design the corporate organizational structure.
- Make critical business processes more efficient and effective.
- Surpass the functional barriers of a management by functions.
- Share the powers and responsibilities within the company.

Socio-political Environment (Hons.)

Course Outcomes:

- To grasp the essential historicity of political processes, political institutions and political change to facilitate an understanding of the dynamic nature of political phenomena.
- Apply sociological theories to understand social phenomena

Business organizations (Hons.)

Course Outcomes:

- Design the corporate organizational structure.
- Make critical business processes more efficient and effective.
- Surpass the functional barriers of a management by functions.
- Share the powers and responsibilities within the company.

Principles of business finance (Hons.)

Course Outcomes:

- Effectively communicate and apply financial concepts and models to solve problems in a decision-making capacity using current technology.

Business organizations (Sub.)

Course Outcomes:

- Design the corporate organizational structure.



- Make critical business processes more efficient and effective.
- Surpass the functional barriers of a management by functions.
- Share the powers and responsibilities within the company.

Principles of Economic (Sub.)

Course Outcomes:

- Demonstrate knowledge and understanding of core economics concepts, tools and models. Apply economic concepts to real world scenarios, and use that analysis to make informed judgements and decisions. Interpret, analyse and depict economic information in diagrams, tables and graphs.

Financial accounting (Sub.)

Course Outcomes:

- Acquire the basic concepts of accounting terms
- Exemplify to prepare and analyse the financial statement

Part – 2

Business Law(Hons.)

Course Outcomes:

- Demonstrate an understanding of the Legal Environment of Business. Apply basic legal knowledge to business transactions. Communicate effectively using standard business and legal terminolog

Specialized accounting (Hons.)

Course Outcomes:

- Demonstrate an understanding of the Legal Environment of Business
- Apply basic legal knowledge to business transactions. Communicate effectively using standard business and legal terminology

Business Law(Hons.)



Course Outcomes:

- Demonstrate an understanding of the Legal Environment of Business. Apply basic legal knowledge to business transactions. Communicate effectively using standard business and legal terminology

Company Law & Administration (Hons.)

Course Outcomes:

- Law determines partnerships or company concept determines elements of partnerships and company agreement
- Reviews the provisions of the law of partnership
- Commercial Code Solves the problems arising from the partnership and company agreement

Business Law (Hons.)

Course Outcomes:

- Demonstrate an understanding of the Legal Environment of Business. Apply basic legal knowledge to business transactions. Communicate effectively using standard business and legal terminology

Economic & Labour Legislation (Hons.)

Course Outcomes:

- To know the development and the judicial setup of Labour Laws
- To learn the salient features of welfare and wage Legislations also to integrate the knowledge of Labour Law in General HRD Practice



18.B. COM. (Business Environment) Hons.

Course Outcomes:

- Demonstrate an understanding of the Legal Environment of Business. Apply basic legal knowledge to business transactions. Communicate effectively using standard business and legal terminology

Business Taxation (Hons.)

Course Outcomes:

- Demonstrate an understanding of the tax practice environment by engaging in basic tax planning activities, by conducting research using CCH Intelli Connect, and by communicating research results orally and in writing
- Explain the professional and ethical standards that govern accountants engaged in tax practice

Money & Banking (Sub.)

Course Outcomes:

- Understand several key models and concepts of monetary economics and banking theory
- Understand simple articles concerned with monetary economics and banking theory
- Apply to current events key models and concepts of monetary economics and banking theory
- Appreciate the potential importance of monetary phenomenon in the economy

Planning & Economic Development (Sub.)

Course Outcomes:

- The course is designed to develop keen interest in various aspects of Economic Development, as well develop their theoretical, empirical and analytical skills

Business Law (Gen.)

Course Outcomes:



- Demonstrate an understanding of the Legal Environment of Business. Apply basic legal knowledge to business transactions. Communicate effectively using standard business and legal terminology

Part – 3

Cost accounting

Course Outcomes:

- Explains the purpose of cost accounting
- Explains main manufacturing cost elements
- Makes costs allocation
- Calculate production cost according to the job cost system and process costing

Management Accounting

Course Outcomes:

- Critically analyse and provide recommendations to improve the operations of organisations through the application of management accounting techniques
- Demonstrate mastery of costing systems, cost management systems, budgeting systems and performance measurement systems

Taxation Law & Accounts

Course Outcomes:

- Understand and determine the residential status and incidence of tax
- Determine the income from salary and house property
- Computation of profits and gains of business or profession

Business statistics & Elementary Mathematics

Course Outcomes:

- Describe and discuss the key terminology, concepts tools and techniques used in business statistical analysis



- Critically evaluate the underlying assumptions of analysis tools
- Solve a range of problems using the techniques covered
- Conduct basic statistical analysis of data

Personnel Management and Industrial Relation

Course Outcomes:

- To introduce the basics concepts, functions and process of personnel management
- To build awareness of certain important and critical issues in Industrial Relations
- To develop an understanding of interaction pattern among labour, management and the organization

Rural Environment & Co-operation

Course Outcomes:

- To impact better education with values and transformation of knowledge from class room to common man
- To attain inclusive growth and reduce regional imbalance and income inequalities
- To acquire relevant knowledge and skills appropriate to professional activities.



19.BACHELOR OF BUSINESS ADMINISTRATION (B.B.A)

1st Semester

Papers:-101 Business Mathematics

Outcomes:-

1. Apply the knowledge of mathematics (Algebra, Different Calculus, Integral Calculus, Elementary of Matrix Algebra, Set theory) in solving business problems.
2. Demonstrate mathematical skills required in mathematically intensive areas in commerce such as Finance and Economics.
3. Understand the important role Mathematics plays in all facets of the business world.
4. Understand the use of equations, formulae, and mathematical expressions and relationship in a variety of contexts.
5. Demonstrate critical thinking, modelling, and problem- solving skills in a variety of contexts.

Paper:- 102 Business Communication

Outcome:-

1. Students will be able to communicate effectively in business organization.

Paper:- 103 Business Accounting

Outcomes:-

1. Students will be able to gain knowledge about business accounting.

Paper:- 104 Business Economics

Outcomes:-

1. Understand the basic elements of business economics, nature, and decision making.
2. Understand Pricing policy under perfect competition Monopoly, Monopolistic competition, oligopoly and Pricing objectives and methods for production to minimize the cost and maximum the profit.
3. Demonstrate an understanding of how markets work to allocate resources and the optimal individual decision- making the underlies market outcomes.
4. Identify various market structures and discuss their implications for resource allocation.
5. Explain the advantages and potential shortcomings of market, discuss the conditions under which market do and do not work well, and describe the role of public policy intervention in case where fail to perform optimally.



Paper:- 105 Business & Industrial Organisation

Outcomes:-

1. Students will be able to understand business & industrial organization.

2nd Semester

Papers:- 201 Principle of Management

Outcomes:-

1. Students will able to manage the organization in well manner.

Papers:- 202 Organization Behaviour

Outcomes:-

1. Apply the fundamental knowledge and exposure to concepts theories and practices in the field of management.
2. Understand the work technique of organizations to ensure success and timely completion of tasks.
3. Understand the importance of motivation in building a strong and competitive business organization.
4. Understand the importance of Leaders and Leadership in the context of Business Organizations.
5. Understand the different Determinants of Individual Behaviour and how these can be used for the benefit of the organization.

Papers:- 203 Business Communication

Outcomes:-

1. Demonstrate knowledge of personal beliefs and values and a commitment to continuing personal reflection and reassessment.
2. Learn to balance confidence with humility.
3. Assert strengthened personal character and further, an enhanced ethical sense.
4. Use persuasive and professional language in speech and writing in a better manner.
5. Utilize constructive negotiation and conflict management skills.

Papers:- 204 Business Statistics

Outcomes:-

1. Students will be able to analyse the numerical data.

Papers:- 205 Fundamental Of Computers



Outcomes:-

1. To gain the basic knowledge about fundamental of computer.

3rd Semester

Papers:-301 Material and Production Management

Outcomes:-

1. Students will be able to do managerial activities of material and production in business organization.

Papers:-302 Human Resource Management

1. Learn the development, implementation, and evaluation of employee recruitment selection and retention plans and processes.
2. Develop the knowledge, skills and concepts needed to resolve actual Human Resource Management problems or issues.
3. Evaluate the procedures and practices used for Recruiting and selecting suitable employees.
4. Assess Training requirements and design a successful orientation and training program.
5. Explain the responsibilities of management, HRM specialists, Managers and employees in managing the employment relationship in a Unionized or a Non- Unionized environment.

Papers:-303 Marketing Management

Outcomes:-

1. Identify the foundation terms and concepts that are commonly used in marketing.
2. Learn to identify the essential elements for effective marketing practice.
3. Give complete relationship between Marketing and other Management functions.
4. Understand the Nature, scope and basic Marketing concepts and strategies.
5. Use marketing information and research to develop marketing strategies.

Papers:-304 Financial Management

Outcomes:-

1. Build an understanding of concepts, vital tools and techniques applicable for Financial Decision making by a business Firm.
2. As procurement of funds is an important activity and decisions as well in a corporate. The students would become aware about the types of sources of finance with their benefit and limitations.
3. Get Familiarize with the concept of time value of money and the various valuation concepts associated with it.



4. Comprehend the concept of capital structure, significance of capital structure, capital structure theories.
5. Appraise different capital budgeting methods and their applications.

Papers:-305 Legal Aspects Of Business

Outcomes:-

1. Students will acquire in-depth knowledge of business of law & legal procedure of conducting business.

4th Semester

Papers:-401 Computer Application in Management

Outcomes:-

1. Students will be able to use computer application in management.

Papers:-402 Research Methodology

Outcomes:-

1. Understand the process of Marketing Research and its different processes.
2. Identify source of information, understand different Research Methods, apply selected Research methods.
3. Learn to analyze and interpret both Qualitative and Quantitative data.
4. Adequate knowledge on various kinds of Research, Objectives of doing Research, Research process, Research design and Sampling, Measurement & Scaling Techniques, Data analysis and Hypothesis testing Procedures and Report writing.
5. Develop data analysis skills which would make them to carry out meaningful interpretation of the data sets, such skills would help them to solve any business or Research problem.

Papers:-403 Management And Control of Cost

Outcomes:-

1. Students will learn the control of cost and its uses in management.

Papers:-404 Entrepreneurship

Outcomes:-

1. Have knowledge about the emergence of entrepreneurial class and various Theories of entrepreneurship.
2. Be in position to know about the various aspects related to analyzing venture capital sources, Raising funds along with legal formalities and documentation thereof.
3. Have Knowledge about entrepreneurial behaviour and various EDPs.
4. Understand about the roles of entrepreneurs towards economic growth, employment opportunities, social stability, balanced industrial



development and earning forex and find themselves prepared to set up and manage own small units.

5. Understand concepts of entrepreneurship and the process of entrepreneurial action.

Papers:-405 Business Environment

Outcomes:-

1. Familiarize with the nature of business environment and its components.
2. Able to demonstrate and develop conceptual framework of business environment and generate interest in business.
3. Outline how an entity operates in a business environment.
4. Analyze the key decisions that the firms make in relationship to the choice of markets and entry strategies.
5. Apply an understanding of the different modes of engagement with markets and explore the interconnectedness between these and the economics, legal, governmental, political, regulatory, cultural and other environment in which expanding companies operate.

5th Semester

Papers:- 501 Corporate Taxation

Outcomes:-

1. This course helps the students to analyse different taxes and their uses in corporate world.

Papers:- 502 Business Values & Ethics

Outcomes:-

1. Understand the importance of Business values and ethics.
2. Learn a background to ethics as a prelude to learn the skills of ethical decisions – making and, then, to apply those skills to the real and current challenges of the information professions.
3. Examine the steps for measurement and reporting with reference to guidelines like the global reporting initiative.
4. Consider the material issues in reporting sustainability and CSR.
5. Analyze the role and implementation of ethics, Human Rights, Governance, Employee engagement, community investment, stakeholder engagement, environmental responsibility, diversity and inclusion strategies etc.

Papers:- 503 Fundamental Of Operation Research

Outcomes:-

1. Students will gain basic knowledge of fundamental of operational research.

Papers:- 504 Management Control Technique



Outcomes:-

1. This course will provide the knowledge of how to use management control technique in business organization.

Papers:- 505 Management Information System

Outcomes:-

1. Students will know the management of information system in business organization.

6th Semester

Papers:- 601

- A. Group :- Marketing Management**
- B. Group :- Human Resource Management**
- C. Group :- Financial Management**
- D. Group :- Information Resource Management**
- E. Group :- E Managing Rural Change**
- F. Group :- International Trade Management**
- G. Group :- Management Of Services**

Outcomes Of Marketing Management :-

- Identify the foundation terms and concepts that are commonly used in marketing.
- Learn to identify the essential elements for effective marketing practice.
- Give complete relationship between Marketing and other Management functions.
- Understand the Nature, scope and basic Marketing concepts and strategies.
- Use marketing information and research to develop marketing strategies.

Outcomes Of Human Resource Management :-

- Learn the development, implementation, and evaluation of employee recruitment selection and retention plans and processes.
- Develop the knowledge, skills and concepts needed to resolve actual Human Resource Management problems or issues.
- Evaluate the procedures and practices used for Recruiting and selecting suitable employees.
- Assess Training requirements and design a successful orientation and training program.
- Explain the responsibilities of management, HRM specialists, Managers and employees in managing the employment relationship in a Unionized or a Non- Unionized environment.



Outcomes Of Financial Management :-

- Build an understanding of concepts, vital tools and techniques applicable for Financial Decision making by a business Firm.
- As procurement of funds is an important activity and decisions as well in a corporate. The students would become aware about the types of sources of finance with their benefit and limitations.
- Get Familiarize with the concept of time value of money and the various valuation concepts associated with it.
- Comprehend the concept of capital structure, significance of capital structure, capital structure theories.
- Appraise different capital budgeting methods and their applications.

Outcomes Of Information Resource Management

- Students will get familiar with information resource management.

Outcomes Of E Managing Rural Change

- Understanding the concept of E- managing rural change.

Outcomes Of International Trade Management

- Get familiar with the concept of international trade management.

Outcomes Of Management Of Services

- Understanding the concept of Management of services.



20.BACHELOR OF COMPUTER APPLICATIONS (BCA)

Semester 1st

Paper:- 101 [Mathematical foundation]

Outcomes:

- understand basics and operations of set theory, relations, functions, metrics, Mathematical logic and group theory
- To impart the required knowledge of mathematics and statistics for managerial activities among students
- To inculcate in students the fundamental Mathematical background in computer science
- Develop analytical ability to solve the real world problem using these methodologies

Paper:- 102 [Computer fundamentals]

Outcomes:

- Understanding the concept of input and outputs device of computers
- Understand the operating system and its working
- Learn basic word processing, spreadsheet and presentation graphics software skills
- Study to use the internet safely, legally and responsibly

Paper:- 103 [Business communication and information systems]

Outcomes:

- To enable the learner to communicate effectively and appropriately in real life situations
- To use English effectively for study purposes across the curriculum
- To develop and integrate the use of four languages skill a) reading b) writing c) listening d) speaking

Paper:- 104 [c programming]

Outcomes:

- Implement strings in your C program
- Store different data types in the same memory
- Manage I/O operations in your C program
- Repeat the sequence of instructions and points for a memory location
- Apply code reusability with functions and pointers



- Understand the basics of file handling mechanisms
- Explain the uses of pre-processors and various memory

Paper:-105 [Lab on Dos and window]

Outcomes:

- To understand the concept of operating system like DOS and window by doing practically

Paper:-106 [Lab on C]

Outcomes:

- Implement strings in your C program
- Store different data types in the same memory
- Manage I/O operations in your C program
- Apply code reusability with functions and pointers
- Understand the basics of file handling mechanisms

Semester 2nd

Paper:-201 [Discrete mathematics]

Outcomes :

- Understand sets and perform operations and algebra on sets
- Determine property of relations, identify equivalence and partial order relations, sketch relations
- Identify functions and determine their properties

Paper:-202 [Computer architecture]

Outcomes:

- To know the background of internal communication of computer
- To have better idea on how to write assemble language programs
- To be clear with memory management techniques
- To notice how to perform computer arithmetic operations

Paper:- 203 [Data structure through C]

Outcomes:

- Apply appropriate constructs of programming language, coding standards for application development



- Use appropriate data structure for problem solving and programming
- Use algorithmic foundation for solving problem and programming
- Apply appropriate searching and/ or sorting techniques for application development

Paper:- 204 [System analysis and design]

Outcomes:

- Define the system development life cycle
- Make the feasibility study about the system
- Carry out the system analysis

Paper:- 205 [Lab on MS- office]

Outcomes:

- To perform documentation
- To perform accounting operations
- To perform presentations skills

Paper:- 206 [Lab on Data structure through C]

Outcomes:

- Apply appropriate constructs of programming language, coding standards for application development
- Use algorithmic foundation for solving problem and programming

Semester 3rd

Paper:- 301 [Fundamentals of Management & Business accounting]

Outcomes:

- To learn the fundamentals of accounting for managers
- To understand fundamentals like accounting concepts, branches of accounting and accounting standards
- To prepare and analyze financial statements
- To learn financial planning & control and major financial decisions
- To understand and choose alternative choice decision making process

Paper:- 302 [Database Management system]

Outcomes:

- Understand the basic concepts of DBMS



- Formulate, using SQL, solutions to a broad range of query and data update problems
- Demonstrate an understanding of normalization theory and apply such knowledge to the normalization of a database
- Understand the concept of Transaction and Query processing in DBMS

Paper:- 303 [object oriented programming using C++]

Outcomes:

- To learn programming from real world examples
- To understand object oriented approach for finding solutions to various problems with the help of C++ language
- To create computer based solutions to various real- world problems using C++
- To learn various concepts of object approach towards problem solving

Paper:- 304 [Numerical methodology]

Outcomes:

- Learn how data is manipulating by using arithmetic operation
- Data manipulation is learning to produce result of given problems
- Learn about the error occur during arithmetic problems
- Detail study of number representation in memory

Paper:- 305 [Lab on DBMS(SQL/MS- ACCESS]

Outcomes

- Understand , appreciate and effectively explain the underlying concepts of database technologies
- Design and implement a database schema for a given problem-domain
- Normalize a database
- Populate and Query a database using SQL DML / DDL commands
- Declare and enforce integrity constraints on a database using a state – of-the- art RDBMS
- Programming PL/SQL including stored procedures ,stored functions, cursors, packages
- Design and build a GUI application using a 4GL

Paper:- 306 [Lab on C++]

Outcomes:

- Use functions and pointers in C++ program
- Understand tokens, expression, and control structures
- Explain arrays and strings and create programs using them



- Describe and use constructors and destructor
- Understand and employ file management
- Demonstrate how to control errors with exception handling

Semester 4th

Paper:- 401 [Java programming]

Outcomes:

- Use an integrated development environment to write, compile, run, and test simple object-oriented Java programs.
- Read and make elementary modifications to Java programs that solve real-world problems.
- Validate input in a Java program.
- Identify and fix defects and common security issues in code.
- Document a Java program using Javadoc.
- Use a version control system to track source code in a project.

Paper:- 402 [Computer Graphics & Multimedia]

Outcomes:

- Student of the branch acquire deeper knowledge in the computer graphics and multimedia
- Study in this branch provide further extension of knowledge of image synthesis in computer graphics, speech processing and recognition, sound and video sequences algorithms for multimedia, and development of systems for human-computer interaction

Paper:- 403 [Operating system & Linux]

Outcomes:

- Explain the structure and functions of operating systems along with their components, types and working
- Make use of appropriate Linux commands for memory management, file management and directory management
- Analyse the performance of different scheduling algorithms along with the policies for concurrency and deadlock management
- Elaborate the system calls for process management and file management

Paper:- 404 [Software Engineering principles]

Outcomes:

- Students will be able to decompose the given project in various phases of a life cycle
- Students will be able to choose appropriate process model depending on the user requirements



- Students will be able to perform various life cycle activities like analysis, design, implementation, testing and maintenance

Paper:- 405 [Lab on Java programming]

Outcomes:

- Use an integrated development environment to write, compile, run, and test simple object-oriented Java programs.
- Read and make elementary modifications to Java programs that solve real-world problems.
- Validate input in a Java program.
- Identify and fix defects and common security issues in code.
- Document a Java program using Javadoc.
- Use a version control system to track source code in a project.

Paper:- 406 [Lab on computer Graphics & Linux]

Outcomes:

- Draw Geometric primitives using GL
- Execute scan line polygon filling using open GL
- Implement basic transformations on objects using open GL
- Implement clipping algorithm on lines using GL

Semester 5th

Paper:- 501 [Relational Database Management system]

Outcomes:

- Understand the basic concepts and applications of database systems
- Master the basics of SQL and construct queries using SQL
- Understand the Relational database design principles

Paper:- 502 [Artificial Intelligence through python programming]

Outcomes:

- Understand and apply concepts in Artificial Intelligence, including Machine Learning and Deep Learning
- Develop skills in Natural language processing
- Use tensor flow to create and train Artificial Neural Networks for image classification
- Create various AI related projects using different python

Paper:- 503 [Web Technology (HTML, Java script, CSS)]

Outcomes:

- Structure and implement HTML/CSS.
- Apply intermediate and advanced web development practices.



- Implement basic JavaScript.
- Create visualizations in accordance with UI/UX theories.
- Develop a fully functioning website and deploy on a web server.

Paper:- 504 [Computer network, security and cyber Law]

Outcomes:

- Explain the concepts of confidentiality, availability, and integrity (CIA) in context of Information Assurance; articulate the threats to CIA and be able to analyse a given architecture, discern vulnerabilities, and recommend physical, logical, or administrative controls to mitigate the threat;
- Demonstrate expertise in configuring host and network level technical security controls, to include host firewalls, user access controls, host logging, network filtering, intrusion detection, and prevention and encryption at all levels;
- Describe the hardware, software, and services that comprise an enterprise network, and be able to articulate how these components integrate to form a network solution;
- Explain key networking protocols, and their hierarchical relationship in the context of a conceptual model, such as the OSI and TCP/IP framework; be able to articulate the low level data communications and subsequent abstractions that allow networked hosts and applications to communicate across the internet;
- Build multiple host and network architectures, given business requirements and constraints; student will configure operating systems, network specific services, routing, switching, and remote access solutions

Paper:- 505 [Lab on oracle]

Outcomes:

- Descriptions of the specific knowledge, skills, or expertise that the learner will get from a learning activity, such as a training session, seminar, course, or program.

Paper:- 506 [Lab on python programming & web technology]

Outcomes:

- Developing adequate skills in programming
- Implementation of various applications using python
- Apply the knowledge of different web technologies to develop web-based applications
- Understand the process of designing and implementing web applications, using PHP.



21.B.SC. BIOTECHNOLOGY

(FIRST YEAR, PAPER - 1st)

A. Genetics :-

- Comprehensive, detailed understanding of the chemical basis of heredity
- Comprehensive and detailed understanding of genetic methodology and how quantification of heritable traits in families and populations provides insight into cellular and molecular mechanism.
- Understanding of how genetic concepts affect broad societal issues including health and disease, food and natural resources, environmental sustainability, etc.
- Understanding the role of genetic mechanism in evolution.
- The knowledge required to design, execute, and analyze the results of genetic experimental in animal and plant model systems.

B. Cell Biology :-

- Describe the evolution, diversity and replication of cells; Explain the role of compartmentalization and signalling in cellular biology; Interpret and explain key experiment in the history of cell biology; evaluate and apply knowledge of modern techniques in cellular biology.

(SECOND YEAR, PAPER – 2nd)

C. Biochemistry :-

- **Students completing the Biochemistry major should: Be able to frame a scientific question or problem. Be able to undertake investigations and perform analyze that provide information about biochemical questions and help to solve biochemical problems.**

D. Microbiology :-

- **Students will be gain knowledge about the different cell organelles of microorganisms and their detailed functions.**

(THIRD YEAR, PAPER – 3rd)

(PRACTICAL)

(PAPER – 4th)

E. Immunology :-

- **The immune system responds to foreign pathogens and cancer cells by activating specific and nonspecific immune responses.**



F. Biophysics :-

- **Foundation examine biophysical scenarios using both a conceptual understanding of the core concepts of biology, chemistry and physics and calculations using the appropriate methods of mathematical, theoretical and computational physics.**
- **Scientific communication means effectively communicate biophysics content through both written reports and oral presentation.**

G. Molecular Biology :-

- **Students will demonstrate ability to use evolution theory and related equations to model and predict population change or stability.**

(PAPER – 5th)

H. Recombinant DNA Technology :-

- **Applications of recombinant DNA in genetic engineering are: for the production of vaccines like then hepatitis B vaccine. Production of transgenic plants with improved qualities like insects and drought resistance and nutritional enrichment. Therapeutic protein production like insulin.**

I. Animal cell culture :-

- **The animal cell culture can be grown for a wide variety of cell based assays to investigate morphology, protein expression, cell growth, differentiation, apoptosis and toxicity.**

J. Maths and Computers :-

- **Apply mathematical and computing knowledge.**
- **Problem solve through modeling of real world phenomena using mathematics and computing.**
- **Communicate mathematical and computing knowledge.**
- **Assess current technology and future trends in computer science.**



- **Approach mathematical and computer science research questions from a perspective consistent with the norms of the field.**

(PAPER – 6th)

K. Methods in molecular and cellular biology :-

- **Students will demonstrate knowledge of the central dogma of biology and predict outcomes when the process malfunctions.**
- **Students will demonstrate ability to use evolutionary theory and related equations to model and predict populations change or stability.**

L. Immunological Methods :-

- **Immunological methods in food analysis offer the intrinsic advantage of very high sensitivity and specific and of ease of automation.**

(PAPER – 7th)

M. Animal cell Biotechnology :-

- **Animal cell culture has many potential applications, including drug discovery and development, vaccine production, tissue engineering and basic research.**

(PAPER – 8th)

N. Plant Biotechnology :-

- **Establish different types of plant cultures.**
- **Apply the technical skills learnt to establish nurseries for horticulture and agricultural crops.**
- **Compare the pros and cons of transgenic plants on environment.**
- **Explain the concepts of intellectual property management and handling of GMOs.**

(PAPER – 9th)

O. Environmental Biotechnology :-

- **Environmental biotechnology can simply be described as the optimal use of nature, in the form of plants, animals, bacteria, fungi and**



algae, to produce renewable energy, food and nutrients.

P. Culture methods :-

- **Culture methods involve taking samples from the field and detecting the presence of microbe by culturing them. From the amount of microbial species their influence on corrosion is estimated.**

(PAPER – 10th)

(Project work)

(PAPER – 11th)

Entrepreneurship Development :-

Opportunity to sharpen entrepreneurial competencies. Project section criteria. Clarity about the business idea. Market potential for the product or service.



22.POST GRADUATE DIPLOMA IN YOGIC STUDIES (PGDYS)

Paper-I: (Basic Concepts of Yoga)

- Course Outcome: This course provides concepts of yoga, History of yoga and its different kinds.

Paper-II: (Applications of Yoga)

- Course Outcomes: This course provides knowledge regarding be er use of yoga in different aspects like physiology, health and lifestyle, stress control, diseases relief, personal growth, and yoga for a be er future.

Paper-III: (Yoga and Mind)

- Course Outcomes: This course provides be er use of yoga for mental well-being to enhance personality and provides psychotherapeutic significance of yoga.

Paper-IV: (Asana Practical)

- Course Outcomes: This course provides practical knowledge about different forms of yoga like Shatkarmas, Pawanmuktasana, Surya Namaskar, Vajrasana, etc.

Paper-V: (Pranayama & Meditation)

- This course provides be er understanding of Pranayama and meditation for improvement in various cardiorespiratory conditions.



23.B.A. MUSIC HONS.

B.A. (Part I)

➤ Theory Paper

Outcomes: Provides the knowledge of music terms, Biographies, Theoretical knowledge of Ragas, Talas etc.

➤ Practical Paper

Outcomes: Being a pupil of performing Arts one should be through with the Art of Practical demonstration along with Alaps, Talas, An inevitable part of Indian Raga sangeet and Dhrupad, Dhamar.

B.A. (Part II)

➤ Theory Paper

Outcomes: Provides the knowledge and expertise in the writing of nota on in different Talas of various ragas of the classical music, while keeping in view of wording of bandishes compositions and also know the science of music, their scales and karnatic music

➤ Practical Paper

Outcomes: To bring about improvement in the rendering of gayakiang. To enhance the knowledge of Tala and practice of notation and to gain knowledge and acquire expertise in presentation of different Bandishes of given Ragas of Classical Music and understand Dhrupad Dhamar forms of classical music.

B.A. (Part III)

➤ Theory Paper

Outcomes: To provides the students with a through theoretical knowledge of Specific Ragas from a comparative point of view. Also, to provide them knowledge of shru and swaras. Also explaining the classification of Ragas, Acoustics of Music, Gharanas and Biographies.

➤ Practical Paper

Outcomes: To bring about improvement in the rendi on in gayaki ang of Ragas via their detailed study. Learning compositions of each category. To enhance the knowledge of Talas and to gain expertise in rendition of alap, tans. Also, the terms like Dhrupad, Dhamar and to gain knowledge and confidence in stage performance aspects of classical music as well as light music.



24.B.A. Honours Hindi (M.I.L)

Part:-1

The course intends to give an understanding of literature, through which stud

1. Acquainted with the work of Fanishwarnath Renu's Kitni Chaurahe, Dr. J. Bharti etc.

Non-Hindi

Outcome

1. After completion of the course, the student will be able to write essays on festival, education, season etc.
2. To gain the knowledge about opposite words, idioms, sentence correction etc.

Composition

Outcome

1. Students will be able to translate Hindi to English.
2. To know Grammar.
3. To appreciate the work of George Orwell's "Animal Farm".

Honours

Paper- I

Outcome:

1. To appreciate the work of Amir Khusro, Kabir, Jaysi, Tulsidas etc.

Paper- II

Outcome:

1. To gain the knowledge about history of Hindi Literature.

General

Outcome:

1. To gain the knowledge about Poetry of Hindi Literature.

Part:- 2

(M.I.L)

Outcome

1. Students will be able to write essays, understand grammar and passage.
2. To appreciate the work of Ramrajya and Sanghmitra.

Non-Hindi

Outcome

1. To gain the knowledge about opposite words, idioms, proverbs etc.

General& Subsidiary

Outcome

1. To appreciate the work of Premchandra' Gaban, Benipuri's Pancamrit etc.

Paper:- III Honours

Outcome

1. To know the history of Hindi Literature from Ancient to Modern.

Paper:- IV

Outcome

1. To appreciate the work of Manas ka Hans, Ajatsatru, and other fictional works.

Paper:- V Honours

Outcome

1. To know the prose of Hindi Literature.

Paper:- VI

Outcome

1. To understand literary terms and criticism.

Paper:- VII

Outcome

1. To understand language science.

Paper:- VIII

ESTD : 1952



Raj Narain College, Hajipur, (Vaishali)
A NAAC ACCREDITED INSTITUTION (Grade B)
(With 'Centre of Excellence' Status of Govt. Of Bihar)
A Constituent Unit of B.R.A. Bihar University, Muzaffarpur



Outcome

1. Students will be able to acquaint with novels, dramas, essays and poetries.

General

Outcome

1. To know the development of language and literature.

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