PART A INTRODUCTION			
Program: Certificate Course	**Class: B.Sc.1st sem. Year**	**Year:2022**	**Session:2022-2023**
Course code	**BOT /CC-1 TH**		
Course Title	**PAPER: Microbial Diversity and Micro-techniques**		
Course Type Core/DSE/OE/GEC	**CORE PAPER :I**		
Course Pre-requisite	**Students should have studied basic science in 12th class at the school level.**		
Course Learning Outcomes:	**Programme Outcome:** 1. To understand significance and role of Microbiology 2. To learn the basic aspects of Microbiology 3. To learn about useful and harmful microorganisms 4. To learn about tools and techniques about microbiology 5. To know about different groups of Microorganisms **Course Outcome: Students will get the knowledge:** 1. Have developed a good knowledge of the development of the discipline of Microbiology and the contributions made by prominent scientists in this field. 2. Have developed a very good understanding of the characteristics of different types of microorganisms. 3. Able to perform basic experiments to grow and study microorganisms in the laboratory. 4. Able to explain the useful and harmful activities of the microorganisms.		
Credit Value	**Theory: 3 + Tutorial:1 + Practical :2** **Total Credit Value =6**		
Total Marks	**Max. Marks:100**	**Min. Marks :33**	

PART A INTRODUCTION				
Program: Certificate Course		**Class: B.Sc.II sem.**	**Year:2022**	**Session:2022-2023**
a.	**Course code**	**BOT /CC-2 TH**		
b.	**Course Title**	**PAPER: Diversity of Non-Flowering Plants**		
c.	**Course Type Core/DSE/OE/GEC**	**CORE PAPER:II**		
d.	**Course Pre-requisite**	**Students should have studied basic science in 12th class at the school level.**		
e.	**Course Learning Outcomes:**	**Programme outcome:** 1. To gain knowledge about non-flowering plants 2. To learn about distribution, classification, algal cultivation and their economic importance 3. To learn about distribution, classification of Bryophytes, Pteridophytes , Gymnosperm and their economic importance. 4. To learn about origin and evolution of Plants and Fossil Plants **Course Outcome:** 1. To Understand the diversity among algae, bryophytes, pteridophytes and Gymnosperms 2. Know the systematic , morphology and structure of algae, bryophytes, Pteridophytes and Gymnosperms 3. Understand the life cycle pattern of algae, bryophytes, **Pteridophytes** and Gymnosperms 4. Know about the useful activities of algae, bryophytes, **pteridophytes** and Gymnosperms 5. Student will learn the origin and evolution of plants through geological time scale in earth history. 6. To learn about how to plants fossilize.		
f.	**Credit Value**	**Theory: 3 + Tutorial:1 + Practical :2** **Total Credit Value =6**		
g.	**Total Marks**	**Max. Marks :100**		**Min. Marks :33**

PART A INTRODUCTION			
Program: Certificate Course	**Class: B.Sc.** **III[rd] Semester**	**Year:2023**	**Session:2023-2024**
Course code	**BSBOT 103**		
Course Title	**PAPER: Taxonomy, Economic and Ethnobotany**		
Course Type **Core/DSE/OE/GEC**	**CORE PAPER :I**		
Course Pre-requisite	**Appeared in Semester II Examination**		
Course Learning Outcomes:	**Programme outcome:** • **To learn about systematic classification, Nomenclature of plants and preparation of Herbarium.** • **Economic importance of monocot and Dicot families and medicinal importance of some plants.** • **Economic importance and cultivation of plants.** • **Anatomy of monocot and dicot plant.** • **Embryology of Flowering plant.** **Course Outcome:** **The students would be able to learn about:** • **Plant Taxonomy** • **Plants and their Characteristics features** • **Economic importance of the plants** • **Traditional knowledge of plants and their applications**		
Credit Value	**LTP 4+0+0 =4 Credit** **Practical 02 Credit** **Total Credit value =6**		
Total Marks	**Max. Marks:100**	**Min. Marks :28**	

PART A INTRODUCTION				
Program: Certificate Course		**Class: B.Sc.** **SEMESTER- IV**	**Year:2023**	**Session:2023-2024**
h.	**Course code**	**BSBOT 204**		
i.	**Course Title**	**PAPER - Anatomy, Embryology and Plant Breeding**		
j.	**Course Type** **Core/DSE/OE/GEC**	**CORE PAPER:II**		
k.	**Course Pre-requisite**	**Students should have studied basic science in 12th class at the school level.**		
l.	**Course Learning Outcomes:**	**Programme outcome:** • **Students learn about tissue and tissue system, Meristems and related theory.** • **Anatomy of monocot and dicot root, stem and leaves and anomalous structure of some plants.** • **Structure of ovule, types of embryo sac, pollination of flowering plants.** • **Techniques of plant breeding and hybridization techniques in agriculture, horticulture and forestry.** **The students would be able to learn about:** • **Internal Structure of root, stem and leaves** • **Anomalous secondary growth** • **Development of angiosperm plants and embryogenesis** • **Plant Breeding and is application**		
m.	**Credit Value**	**LTP 4+0+0 =4 Credit** **Practical 02 Credit** **Total Credit value =6**		
n.	**Total Marks**	**Max. Marks:100**	**Min. Marks:28**	

DEPARTMENT OF BIOTECHNOLOGY

GOVT.D.B. GIRL'S P.G. (AUTONOMOUS) COLLEGE RAIPUR CHHATTISGARH

Programme Outcomes, Programme Specific Outcomes, Course Outcomes

PROGRAMME: B.SC. (BIOTECHNOLOGY)

PROGRAMME CODE: (Biotechnology/Botany/Chemistry) BSBT01

: (Zoology/Biotechnology/Chemistry) BSBT01

SCHEME OF PROGRAMME AT A GLANCE

Program Structure

Session- 2022-23

The detailed structure of Under Graduate Curriculum Frame Work (UGCF) courses with credits

B.Sc. (Basic) BIOTECHNOLOGY as a Core subject

B.Sc. SEM-I							
S.no.	**Course code**	**Category of course**	**Teaching hours/per week LTP (3+1+2)**	**SEE**	**CIE**	**Total marks**	**Credits**
DSC -A1	**-**	**CORE**	**-**	**-**	**-**	**100**	**6**
DSC -B1	**-**	**CORE**	**-**	**-**	**-**	**100**	**6**
DSC -C1	**BSBT(T)101**	**CORE**	**4+0+0**	**60**	**10**	**70**	**6**
	BSBT(P)101		**2+0+0**	**30**		**30**	
GE	**-**	**-**		**-**	**-**	**100**	**6**
AEC	**BA/BSHINL-101**	**-**	**2**	**35**	**15**	**50**	**2**
VAC	**Anyone from the pool**	**-**	**2**	**35**	**15**	**50**	**2**
						400	**22**
B.Sc. SEM-II							
DSC -A2	**-**	**CORE**		**-**	**-**	**100**	**6**
DSC -B2	**-**	**CORE**		**-**	**-**	**100**	**6**
DSC -C2	**BSBT(T)102**	**CORE**	**4+0+0**	**60**	**10**	**70**	**6**
	BSBT(P)102		**2+0+0**	**30**		**30**	
GE	**-**	**-**				**100**	**6**
AEC	**BA/BSCENGL-102**		**2**	**35**	**15**	**50**	**2**
VAC	**ENVIRONMENT**		**2**	**35**	**15**	**50**	**2**
						400	**22**

PROGRAMME OUTCOME

The B.Sc. Biotechnology is a four-year undergraduate program in semesters. In the first two semesters student study core subjects of biotechnology to ensure they achieve their goal of learning, and also receive grounding knowledge in fundamentals of Biotechnology as a core subject.

Upon successful completion of the program, the student should have understood the basic introduction and the significance of Biotechnology. obtaining fundamental knowledge gives an interest in the scientific research area and the ability to carry out practical work, in the field and in the laboratory. All the courses in the program are designed to equip the students for competitive exams like PG Entrance, CSIR NET, SET, etc.

PROGRAMME SPECIFIC OUTCOMES

PSO	**fundamental knowledge of Biomolecule and use of instruments**	Students would benefit from knowledge of core and applied subjects of biotechnology, which are offered in these subjects' modules on analytical techniques to generate interest in learning and research. Able to explain the methods used for biotechnology to society and the environment.
	On successful completion, the student should have understood the basic introduction of biotechnology.	Obtaining learning gives an interest in scientific research area and the ability to carry out practical work, in the field and the laboratory.

COURSE OUTCOMES

Course code	Course Outcomes
BS1BT01/22 **Title of the Paper- Introduction to Biotechnology, Biochemistry, and Biophysics**	As a basic and necessary part of the research field in biotechnology, students gain fundamental knowledge of biochemistry, DNA, RNA, and gene structure with the learning of the uses of instruments. Basic learning of biophysics and use of instruments like centrifuge, colorimeter, etc.
BS1BT02/22 **Title of the Paper -Cell Biology, Genetics and Microbiology**	Students will understand the structures and purposes of basic components of prokaryotic and eukaryotic cells, underlying mitotic cell division. Explain the organization of Genes and chromosome morphology and its aberrations. Understand the Historical introduction to Genetics and genetic materials and concepts and principles of genetics exchanges Compare and contrast the events of the cell cycle and its regulation. Understand the development of Microbiology and Microbial growth**.**

Programme Outcomes, Programme Specific Outcomes, Course Outcomes

PROGRAMME: B.SC. (BIOTECHNOLOGY)

SCHEME OF PROGRAMME AT A GLANCE

Undergraduate Curriculum Frameworks Work for B.Sc. Biotechnology, Three-Year Degree Course

Program Structure

Session- 2022-23

B.Sc. Part II Biotechnology

COURSE/PAPER	COURSE TITLE	THEORY PAPER I&II		PRACTICAL PAPER
BS2BT01/22	MOLECULAR BIOLOGY AND BIOPHYSICS	50		
BS2BT02/22	RECOMBINANT DNA TECHNOLOGY AND GENOMICS	50		50
		Total	100	50

B.Sc. Part III Biotechnology

COURSE/PAPER	COURSE TITLE	THEORY PAPER I&II		PRACTICAL PAPER
BS3BT01/22	GENERAL BIOTECHNOLOGY; PLANT, ENVIRONMENT AND INDUSTRIAL BIOTECHNOLOGY	50		50
BS3BT02/22	IMMUNOLOGY AND ANIMAL BIOTECHNOLOGY	50		
		Total	100	50

PROGRAMME OUTCOME

The B.Sc. Biotechnology is a three-year degree course. biotechnology Course contains topics covering all aspects of applied biotechnology-based industry, such as Pharmaceuticals and drug manufacturing industries, and other fields such as Intellectual Property Rights and Patents, commercializing technology, etc. All the courses in the programme are designed to equip the students for competitive exams like PG Entrance, CSIR NET, SET, etc.

PO1	The students gain core and fundamental knowledge of the subject of biotechnology
PO2	As a basic and necessary part of the research field in biotechnology, in the second-year students gain fundamental knowledge of DNA, RNA, and gene structure with the learning of the uses of instruments, and general concept and application of recombinant DNA technology.
PO3	Study plant tissue culture techniques and learn aspects about applied biotechnology-based industry, and immunological techniques along with the application of environmental biotechnology.

PROGRAMME SPECIFIC OUTCOMES

PSO1	**fundamental knowledge of Biomolecule and use of instruments**	Obtaining learning gives an interest in the scientific research area and the ability to carry out practical work, in the field and the laboratory.
PSO2	**Practical skills with Knowledge of application of recombinant DNA technology,**	Able to explain the methods used for biotechnology to society and the environment. Use the Bioinformatics tool in biological data analysis and classify different types of biological databases
PSO3	**Application of Knowledge in Biotechnology**	This would provide them with skills for both research and industrial purposes.
PSO4	**fundamental knowledge of Immunology**	Subject Practice with knowledge of the immune system and its diversity, immunogenic technique.

COURSE OUTCOMES OF B.SC. IN BIOTECHNOLOGY

Course code	Course Outcomes
BS2BT01/22	Fundamental knowledge of DNA, RNA, and gene, Study of protein synthesis, advanced study of Gene therapy, Basic learning of biophysics, and use of instruments like centrifuge, colorimeter, etc.
BS2BT02/22	General concept and application of recombinant DNA technology, use of vectors in genetic engineering, study of PCR, genome map genomic project, IVF, stem cell technology, transgenic animal and plant.
BS3BT01/22	Basic techniques of plant tissue culture and application of plant biotechnology, the study of environment biotechnology and industrial biotechnology, importance of food preservation and food technique.
BS3BT02/22	General and Fundamental knowledge of antibodies, Study of immunological disorders and autoimmune disease. as well as functional knowledge of immunology, diversity of the immune system, the study of antibodies

DEPARTMENT OF CHEMISTRY

Govt. D. B. Girls P.G. College, Raipur, C.G.

Program Outcomes, Program Specific Outcomes and Course Outcomes

PROGRAM: B.Sc. (Chemistry/ Botany/ Geography)

PROGRAM CODE:

SCHEME OF PROGRAM AT A GLANCE

Course	Course Title	Theory / Practical Course Max. Marks	Credit Value
B.Sc. I Semester			
CHEM - DSC T-01	Fundamentals of Chemistry - I	60+10*	4
CHEM - DSC P-01	Practical - I	30	2
	Total	100	6
B.Sc. II Semester			
CHEM -DSC T-02	Fundamentals of Chemistry - II	60+10*	4
CHEM - DSC P-02	Practical - II	30	2
	Total	100	6
*Internal assessment marks			

PROGRAM OUTCOMES

After successful completion of three-year degree program with chemistry as one of the core subject a students will be able to:

PO-1 :- Demonstrate, solve and have an understanding of major concepts in all disciplines of chemistry.

PO-2 :- Gain the knowledge of chemistry through theory and practical.

PO-3 :- To explore nomenclature, stereochemistry, structures, reactivity and mechanism of the chemical reactions. Identify chemical formulae and solve numerical problems.

PO-4 :- Know the structure activity relationship, understand good laboratory practice and safety.

PO-5 :- Students can expand the knowledge available opportunities related to the chemistry in government and private sectors specially in the field of food safety, quality control, health inspector, pharmacist, environmentalist, chemists and also, they can choose to civil services.

PROGRAM SPECIFIC OUTCOMES

After the successful completion of UG programs in Chemistry the students will be able to :-

PSO-1 :- Gain the knowledge of Chemistry through theory and practical's.
PSO-2 :- To explain nomenclature, stereochemistry, structures, reactivity, and mechanism of the chemical reactions.
PSO-3 :- Identify chemical formulae and solve numerical problems.
PSO-4 :- Use modern chemical tools, Models, Chem-draw**,** Charts and Equipment's.
PSO- 5 :- Know structure-activity relationship.
PSO- 6 :- Understand good laboratory practices and safety.
PSO- 7 :- Develop research oriented skills.
PSO- 8 :- Make aware and handle the sophisticated instruments/equipments.

COURSE OUTCOMES

Course Code	Name of Paper	Course outcome
CHEM - DSC 01	**Fundamentals Of Chemistry - I**	• Atomic theory and its evolution. • Learning scientific theory of atoms, concept of wave function. • Elements in periodic table; physical and chemical characteristics, periodicity. • To predict the atomic structure, chemical bonding, and molecular geometry based on accepted models. • To understand atomic theory of matter, composition of atom. • Identity of given element, relative size, charges of proton, neutron and electrons, and their assembly to form different atoms. • Physical and chemical characteristics of elements in various groups and periods according to ionic size, charge, etc. and position in periodic table. • Characterize bonding between atoms, molecules, interaction and energetics (ii) hybridization and shapes of atomic, molecular orbitals, bond parameters, bond- distances and energies. • Valence bond theory incorporating concepts of hybridization predicting geometry of molecules. • Basic of organic molecules, structure, bonding, reactivity and reaction mechanisms. • Stereochemistry of organic molecules – conformation and configuration, asymmetric molecules and nomenclature. • Aromatic compounds and aromaticity, mechanism of aromatic reactions. • Understanding hybridization and geometry of atoms, 3-D structure of organic molecules, identifying chiral centers. • Reactivity, stability of organic molecules, structure, stereochemistry. • Electrophile, nucleophiles, free radicals, electronegativity, resonance, and intermediates along the reaction pathways. Mechanism of organic reactions (effect of nucleophile/leaving group, solvent), substitution vs. elimination.

CHEM - DSC P-01	**Practical - I**	• Facilitate the learner to make solutions of various molar concentrations. This may include: The concept of the mole; Converting moles to grams; Converting grams to moles; Defining concentration; Dilution of Solutions; Making different molar concentrations. • Explain the theoretical principles and important applications of classical analytical methods within titration (acid/base titration, complexometric titration, redox titration), and various techniques within gravimetric methods. • Be familiar with calculations in analytical chemistry, be able to calculate titration errors for method evaluation, and perform statistical evaluation of results from classical and instrumental chemical experiments and analyses. • Enable to identify the elements(N,S,X) and Functional group in the given organic compound. • Make scientific reports from chemical experiments and present the results in a transparent manner.
CHEM - DSC 02	**Fundamentals Of Chemistry - II**	1. Familiarization with various states of matter. 2. Physical properties of each state of matter and laws related to describe the states. 3. Calculation of lattice parameters. 4. Electrolytes and electrolytic dissociation, salt hydrolysis and acid-base equilibria. 5. Understanding Kinetic model of gas and its properties. 6. Maxwell distribution, mean-free path, kinetic energies. 7. Behavior of real gases, its deviation from ideal behavior, equation of state, isotherm, and law of corresponding states. 8. Liquid state and its physical properties related to temperature and pressure variation. 9. Properties of liquid as solvent for various household and commercial use. 10. Solids, lattice parameters – its calculation, application of symmetry, solid characteristics of simple salts. 11. Ionic equilibria – electrolyte, ionization, dissociation. 12. Salt hydrolysis (acid-base hydrolysis) and its application in chemistry. 13. Familiarization about classes of organic compounds and their methods of preparation. 14. Basic uses of reaction mechanisms. 15. Name reactions, uses of various reagents and the mechanism of their action. 16. Preparation and uses of various classes of organic compounds. Organic chemistry reactions and reaction mechanisms.
CHEM - DSC P-02	**Practical - II**	• Determine surface tension of any liquid. • Explain the theoretical principles and important applications of classical analytical methods within pH-metric titration. • Explain the theoretical principles of various separation techniques in chromatography, and typical applications of chromatographic techniques. • Enable to identify the organic compound.

PROGRAM: B.Sc. (Chemistry/ Botany/ Geography)

PROGRAM CODE: BSCBG06

SCHEME OF PROGRAM AT A GLANCE

Course	Course Title	Theory Course
		Max. Marks
Second Year		
BS2CH01/22	INORGANIC CHEMISTRY	33
BS2CH02/22	ORGANIC CHEMISTRY	33
BS2CH03/22	PHYSICAL CHEMISTRY	34
BS2CHLC/22	LABORATORY COURSE	50
	TOTAL	**150**
Third Year		
BS3CH01/22	INORGANIC CHEMISTRY	33
BS3CH02/22	ORGANIC CHEMISTRY	33
BS3CH03/22	PHYSICAL CHEMISTRY	34
BS3CHLC/22	LABORATORY COURSE	50
	TOTAL	**150**

PROGRAM OUTCOMES

After successful completion of three-year degree program with chemistry as one of the core subject a students will be able to:

PO-1 :- Demonstrate, solve and have an understanding of major concepts in all disciplines of chemistry.

PO-2 :- Gain the knowledge of chemistry through theory and practical.

PO-3 :- To explore nomenclature, stereochemistry, structures, reactivity and mechanism of the chemical reactions. Identify chemical formulae and solve numerical problems.

PO-4 :- Know the structure activity relationship, understand good laboratory practice and safety.

PO-5 :- Students can expand the knowledge available opportunities related to the chemistry in government and private sectors specially in the field of food safety, quality control, health inspector, pharmacist, environmentalist, chemists and also, they can choose to civil services.

PROGRAM SPECIFIC OUTCOMES

After the successful completion of UG programs in Chemistry the students will be able to :-

PSO-1 :- Gain the knowledge of Chemistry through theory and practical's.
PSO-2 :- To explain nomenclature, stereochemistry, structures, reactivity, and mechanism of the chemical reactions.
PSO-3 :- Identify chemical formulae and solve numerical problems.
PSO-4 :- Use modern chemical tools, Models, Chem-draw**,** Charts and Equipment's.
PSO- 5 :- Know structure-activity relationship.
PSO- 6 :- Understand good laboratory practices and safety.
PSO- 7 :- Develop research oriented skills.
PSO- 8 :- Make aware and handle the sophisticated instruments/equipments.

COURSE OUTCOMES

Course Code	Name of Paper	Course outcome
BS2CH01/22	**INORGANIC CHEMISTRY**	• Enable students to understand chemistry of transition series elements. • Enable to know the oxidation and reduction phenomenon and its applications. Also enable to know the introductory of **co**-ordination compounds. • Enable to know the chemistry of the co-ordination compounds. • Enable to understand the chemistry of Lanthanides and Actinides. • Enable to understand concepts of acids and bases, reactions in non-aqueous solvents with special reference to liquid ammonia and Sulphur dioxide.
BS2CH02/22	**ORGANIC CHEMISTRY**	• Enable students to learn the chemistry of organic halides. • Enable to undersland the preparation**,** chemical properties of alcohols and phenols. • Enable to understand the preparation, chemical properties of aldehydes and ketones • Enable to understand the prepration, chemical properties of carboxylic acids and their derivatives. • Enable to understand the preparation**,** chemical properties of organic compound of nitrogen.
BS2CH03/22	**PHYSICAL CHEMISTRY**	• Enable students to understand use of units and notation in thermodynamics. • Enable to understand the phase equilibrium and different phase systems. Enable to understand concepts ofentropy, enthalpy, reversibility and ineversibility • Enable to understand first second and law of the rmodynamics and other thermodynamic properties.
BS2CHLC/22	**LABORATORY COURSE**	• Facilitate the learner to make solutions of various molar concentrations. This may include: The concept of the mole; Converting moles to grams; Converting grams to moles; Defining concentration; Dilution of Solutions; Making

		different molar concentrations. • Explain the theoretical principles and important applications of classical analytical methods within titration (acid/base titration, complexometric titration, redox titration), and various techniques within gravimetric methods. • Be familiar with calculations in analytical chemistry, be able to calculate titration errors for method evaluation, and perform statistical evaluation of results from classical and instrumental chemical experiments and analyses. • Enable to identify the elements(N,S,X) and Functional group in the given organic compound. • Make scientific reports from chemical experiments and present the results in a transparent manner. • Determine surface tension of any liquid. • Explain the theoretical principles of various separation techniques in chromatography, and typical applications of chromatographic techniques. • Enable to identify the organic compound
BS3CH01/22	**INORGANIC CHEMISTRY**	• To understand how the electronic structure and colours of metal complexes are explained by crystal field theory • Understand the structure and properties of important organometallic compounds like methyl lithium, Zeiss salt, ferrocene and metal carbonyls, applications of EAN rule and back bonding in metal carbonyls. • Learn how metal ions function in biological systems, paying special attention to the functioning of the sodium-potassium pump in organisms, the creation of energy by Mg2+ ions, the clotting of blood by Ca2+ ions, the stability of protein structures, and the structural role of metal ions (bones).
BS3CH02/22	**ORGANIC CHEMISTRY**	• Enable to use their understanding of organic mechanisms to predict the outcome of reactions. • Enable to understand the design syntheses of organic molecules. • Enable to determine the structure of organic molecules using IR and NMR spectroscopic techniques. • Enable to use nuclear magnetic resonance spectroscopy, mass spectrometry and infrared spectroscopy for organic structure elucidation
BS3CH03/22	**PHYSICAL CHEMISTRY**	• Being able to distinguish between classical and quantum mechanics requires an understanding of quantum chemistry and its application to microscopic entities. • Understand the different regions of spectroscopy, electronic transition through electronic spectroscopy, interpret and apply the basic concepts of spectroscopy • To know about photochemistry, laws of photochemistry, quantum yield and its measurement and understand the difference between thermal and photochemical reactions
BS3CHLC/22	**LABORATORY COURSE**	• Enable to understand synthetic strategies for inorganic and organic syntheses. • Explain the theoretical principles and important

		applications of classical analytical methods within pH-metric titration and conductometric titration along with change of chemical energy to electrical energy. • Enable to understand quantitative analysis technique. • Enable to understand the function of sophisticated instruments.

DEPARTMENT OF CHEMISTRY

Govt. D. B. Girls P.G. College, Raipur, C.G.

Program Outcomes, Program Specific Outcomes and Course Outcomes

PROGRAM: M.Sc. Chemistry

PROGRAM CODE: MSCHE02

SCHEME OF PROGRAM AT A GLANCE

First Semester

Course code	Course Title	Marks						Credit Point	Total
		Theory		Internal Test		Seminar			
		Max	Min	Max	Min	Max	Min		
CHE.101	Group Theory and Chemistry of Complexes	80	16	10	02	10	02	04	100
CHE.102	Concept in Organic Chemistry	80	16	10	02	10	02	04	100
CHE.103	Quantum Chemistry, Thermodynamics & Chemical dynamics-I	80	16	10	02	10	02	04	100
CHE.104	Theory & applications of Spectroscopy -I	80	16	10	02	10	02	04	100
Laboratory course - 1	Inorganic Practical							02	100
Laboratory course – 2	Physical Practical							02	100
Grand Total -								20	600

Second Semester

Course code	Course Title	Marks						Credit Point	Total
		Theory		Internal Test		Seminar			
		Max	Min	Max	Min	Max	Min		
CHE.201	Transition Metal Complexes	80	16	10	02	10	02	04	100
CHE.202	Reaction Mechanisms	80	16	10	02	10	02	04	100
CHE.203	Quantum Chemistry, Thermodynamics & Chemical dynamics-II	80	16	10	02	10	02	04	100
CHE.204	Theory & applications of Spectroscopy -II	80	16	10	02	10	02	04	100
Laboratory course - 1	Organic Practical							02	100
Laboratory course – 2	Analytical Practical							02	100
Grand Total -								20	600

Third Semester

Course code	Course Title	Marks						Credit Point	Total
		Theory		Internal Test		Seminar			
		Max	Min	Max	Min	Max	Min		
CHE.301	Resonance Spectroscopy & Photochemistry	80	16	10	02	10	02	04	100
CHE.302	Chemistry Of Biomolecules	80	16	10	02	10	02	04	100
CHE.303	Analytical Techniques & Data Analysis	80	16	10	02	10	02	04	100
CHE.304	Statistical Thermodynamics, Solid State, Polymer & Surface Chemistry	80	16	10	02	10	02	04	100
Laboratory course - 1	Physical Practical							02	100
Laboratory course – 2 & Internship	Analytical Practical & Internship							02	100
Grand Total -								20	600

Fourth Semester

Course code	Course Title	Marks						Credit Point	Total
		Theory		Internal Test		Seminar			
		Max	Min	Max	Min	Max	Min		
CHE.401	Instumental Methods of Analysis	80	16	10	02	10	02	04	100
CHE.402	Environmental & applied Chemical Analysis	80	16	10	02	10	02	04	100
CHE.403	Catalysis Material & Nuclear Chemistry	80	16	10	02	10	02	04	100
CHE.404A	Natural Product	80	16	10	02	10	02	04	100
CHE.404B	Medicinal Chemistry	80	16	10	02	10	02	04	100
Laboratory course - 1	Organic Practical							02	100
Dissertation	Dissertation/Project							02	100
Grand Total -								20	600

PROGRAM OUTCOMES

After completion of degree, students gained the theoretical as well as practical knowledge of handling chemicals. Also, they expand the knowledge available opportunities related to chemistry in the government services through public service commission particularly in the field of food safety, health inspector, pharmacist etc. Afford a broad foundation in chemistry that stresses scientific reasoning and analytical problem solving with a molecular perspective. Achieve the skills required to succeed in graduate school, professional school and the chemical industry like cement industries, agro product, Paint industries, Rubber industries, Petrochemical industries, Food processing industries, Fertilizer industries etc. Got exposures of a breadth of experimental techniques using modern instrumentation. Understand the importance of the elements in the periodic table including their physical and chemical nature and role in the daily life. Understand the concept of chemistry to inter relate and interact to the other subject like mathematics, physics, biological science etc. Learn the laboratory skills and safely to transfer and interpret knowledge entirely in the working environment.

PO1 :- Demonstrate and apply the fundamental knowledge of the basic principles in various fields of Chemistry.

PO2 :-Create awareness and sense of responsibilities towards environment and apply knowledge to solve the issues related to Environmental pollution.

PO3:- Apply knowledge to build up small scale industry for developing endogenous product.

PO4 :- Apply various aspects of chemistry in natural products isolations, pharmaceuticals, dyes, textiles, polymers, petroleum products, forensic etc. and also to develop interdisciplinary approach of the subject.

PO5 :- collaborate effectively on team-oriented projects in the field of Chemistry or other related fields..

PO6 :- communicate scientific information in a clear and concise manner both orally and in Writing inculcate logical thinking to address a problem and become result oriented with a positive attitude.

PO7 :- Apply the knowledge to develop the sustainable and eco-friendly technology in Industrial Chemistry.

PO8 :-Have developed their critical reasoning, judgment and communication skills.

PO9 :-Augment the recent developments in the field of green and eco-friendly reactions, pharmaceutical, Bioinorganic Chemistry and relevant fields of research and development.

PO10 :- Enhance the scientific temper among the students so as to develop a research culture and implementation of the policies to tackle the burning issues at global and local level.

PROGRAM SPECIFIC OUTCOMES

PSO1 :-Create an awareness of the impact of chemistry on the society, and development outside the scientific community.

PSO2 :-Work in the pure, interdisciplinary and multidisciplinary areas of chemical sciencesand its applications.

PSO3 :- Analyse data obtained from various sophisticated instruments (like UV Vis, Fluorescence, FTIR, NMR, TGA DIA DSC, GCMS and HPLC) for the structure determination and chemical analysis. **PSO4** :- Apply different appropriate approach towards planning and execution of research in frontier areas of chemical sciences .

PSO5 :- Enormous job opportunities at all level of chemical, pharmaceutical, food products, life oriented material industries

PSO6 :- Specific competitive exams conducted by service commission, CSIR-NET etc.

PSO7 :- Helps in understanding the causes of environmental pollution and can open up new methods for environmental pollution control.

PSO8 :- Become professionally trained in the area of industry, material science, lasers andnano-technology.

COURSE OUTCOMES

Course Code	Name of Paper	Course outcome
CHE.101	**Group Theory and Chemistry of Complexes**	• Enable student to learn the symmetry and symmetry elements their operation and the symmetry point group. This also enables students to form the character table of different point groups and their characteristics and spectroscopic properties. • Enable to understand crystal field theory, Molecular orbital theory**,** types of complexes (octahedral, tetrahedral and square planar complexes), and type of bonding and Molecular orbital theory. • Enable to understand metal carbonyl and their structure and bonding, enable to, to understand the reactions of metal metal nitrosyl, di-nitrogen and di-oxygen complexes, tertiary phosphine as ligand. Enable to understand metal ligand equlibri4 stepwise and overall formation constants, trends in stepwise constants, factors affecting the stability of metal complexes. • Enable to understand the topic Isopoly and heteropoly acid. Also enable to learn the classification, preparation, properties and structures of Borides, Carbides, Nitrides and Silicides and Silicates. • Enable to understand metal clusters including higher boranes, carboranes**,** metalloboranes and metallocarboranes, metal carbnonyl and halide cluster.
CHE.102	**Concept in Organic Chemistry**	• Enable to learn the nature of bonding in organic molecules, electronic effects and aromaticity • Enable to understand conformational analysis cycloalkanes, decalins, effect of conformation on reactivity, conformation of sugars, steric strain. To learn the stereochemistry which includes Elements of symmetry, chirality, methods of resolution, optical purity, stereospecific and stereoselective synthesis, etc. • Enable to understand the generation and reactions of intermediates viz carbocations, carbanions, free radicals, carbenes and nitrenes. Sandmeyer reaction and Free radical. • Enable to understand the pericyclic reactions and their mechanism.
CHE.103	**Quantum Chemistry, Thermodynamics & Chemical dynamics-I**	• Enable to learn the mathematical concept in quantum chemistry which includes vector, dot cross, complex numbers and co-ordinate transformations differential and integral calculus, quantum mechanics, the Schrodinger equation and its applications. Enable to learn the basics of thermodynamics: Maxwell's thermodynamic relations and is applications. Enable to learn elementary electrochemistry

		electrochemistry of solution, debye-huckel onsager treatment and its which includes extension, ion solvent interactions, Debye-Huckel-limiting law, Debye- Huckel theory for activity coefficient of electrolytic solutions. Enable to learn chemical dynamics viz methods of determining rate laws, consecutive reactions, collision theory of reaction rates, steric factor, activated complex theory, kinetic salt effects, steady state kinetics and thermodynamic and Kinetic control of reactions etc.
CHE.104	**Theory & applications of Spectroscopy -I**	• Enable students to know the basic terms of the spectroscopy and their uses in the spectroscopic phenomenon • Microwave spectroscopy enables students to learn the type of the molecules and their interaction with microwave radiation. Also enable to learn the spectral properties and application of the microwave spectroscopy • In this unit student learn about the different types of scattering spectroscopy, their principle, instrumentation and uses in the field of chemistry. • Raman spectroscopy is the very important part of the spectroscopy enable student to know about the Raman Effect, theories of Raman Effect, instrumentation and its application in molecular structure.
Laboratory course - 1	**Inorganic Practical**	• Enable to analyse basic and acidic radicals in inorganic mixture. • Enable to separate ores, alloys or mixtures in solution by Volumetric and Gravimetric method. • Synthetic and characterization strategies involved in various transition metal complexes. • Enable to estimate inorganic compound present in a commercial sample.
Laboratory course – 2	**Physical Practical**	• Enable to determine CMC of surfactants. • Enable to construct the phase diagram for three component system. • Enable to determine the molar masses of organic compound by rast method. • Enable to determine the strength and dissociation constant of acid by potentiometric method. • Enable to determine the solubility, solubility product, velocity constant, order of reaction by conductometric method.
CHE.201	**Transition Metal Complexes**	• Enable to understand the reaction mechanism of transition metal complexes includes energy profile of a reaction, reactivity of metal complexes inert and labile complexes, kinetic application of valence bond and crystal field theories, kinetics of octahedral substitution, a nation reactions etc. • Enable to learn the electronic spectra and magnetic properties of transition metal complexes. • Enable to learn the preparations, properties, nature of bonding and structure and reactions of transition metal complexes with unsaturated organic molecules such as alkanes, allyl, diene dienyl, arene. • Enable to understand the transition metals compound with bond to hydrogen: ransition metals compounds with bond to hydrogen. unit iv a- alkyls and aryls of transition metals: Types, routes of synthesis, stability and decomposition pathways, organocopper in organic synthesis Enable to learn the compounds of transition metal - carbon multiple bonds and structural characteristics, fluxional organometallic

		compounds.
CHE.202	**Reaction Mechanisms**	• Enable to understand the aliphatic nucleophilic and aromatic nucleophilic substitution reaction and its mechanism. • Enable to understand aliphatic electrophilic and aromatic electrophilic substitution reaction and its mechanisms. • Enable to learn the addition reaction to carbon-carbon multiple bonds, mechanism and stereochemical aspects of addition reactions. Enable to understand the addition to carbon-hetero multiple bonds, Mechanism of metal hydride reduction of saturated and unsaturated carbonyl compounds.
CHE.203	**Quantum Chemistry, Thermodynamics & Chemical dynamics-II**	• Enable to understand the application of matrices Angular Momentum in quantum chemistry and the approximation methods. • Enable to understand the thermodynamics of non ideal gases and non equilibrium thermodynamics. • Enable to learn electrochemistry II includes the structure of electrified interfaces. Gouy-Chapman, Stem, over potentials and exchange current density, Derivation of Butler Volmer equation, Tafel plot. Semiconductor interfaces, Theory of double layer at semiconductor, electrolyte solution interfaces, structure of double layer interfaces Enable to understand chemical dynamics- II: General features of fast reactions by flow method, relaxation method dynamics of unimolecular reaction. [Lindemann - Hinshelwood and Rice Ramsperger-Kassel-Marcus (RRKM)] theories
CHE.204	**Theory & applications of Spectroscopy -II**	• Enable student to learn about the various type of electonic transitions, Beer Lambert Law, Fieser-Woodward rule for the calculation of Lamda max of different conjugated dienes and carbonyl compounds. This also enable students to interpretate the UV-Visible spectra for the identification of molecules. • Infrared spectroscopy is a vibrational spectroscopy which enables students to learn the vibrational behavior of the molecules and their interaction with EMR. This also enable students to interpretate the IR spectra for the identification of structure of the compounds. Enable students to learn the fragmentation pattern of molecules, factor affecting the fragmentation, rearrangement reaction, instrumentation and characteristics of mass spectra of different organic molecules. NMR and Carbon 13 NMR enable students to know the nuclear spin and its resonance after interaction with EMR. This also enable to learn the interpretation of MNR data for the structure elucidation of organic molecules
Laboratory course - 1	**Organic Practical**	• Enable to Separate and purify the organic compounds. • Enable to learn different distillation techniques. • Enable to separate and identify th organic compounds. • Enable to prepare organic compounds.
Laboratory course – 2	**Analytical Practical**	• Enable to analyse Error and statistical data. • Enable to determine ions by Flame photometric method. • Enable to determine ions by Nephelometric method. • Enable to separate cations of inorganic salts by paper electrophoresis.
CHE.301	**Resonance Spectroscopy & Photochemist**	• Enable to understand Principle and Application of "Electron Spin Resonance and nuclear Spin Quadrupole Resonance spectroscopy". Enable to understand basic principles of "Photoelectric effect "and spectra for atoms and molecules.

	ry	• Enable to understand basic principles of "Photoacoustic Spectroscopy" • Enable to understand process of "Photochemical reactions". • Enable to understand Photochemistry of Alkenes, carbonyl compounds and Aromatic compounds.
CHE.302	**Chemistry Of Biomolecules**	• Enable students' bioenergetics, electron transfer reaction in biology and transport & storage of dioxygen. • Enable to know the mechanism of metalloenzymes and enzyme models. • Enable to learn the enzymes and Co-enzyme chemistry and biotechnological application of enzymes. • Enable students to know the biopolymer interaction, thermodynamics of biopolymer solution, cell membrane and transport of ions.
CHE.303	**Analytical Techniques & Data Analysis**	• Enable students to learn the statistical thermodynamics viz Maxwell Boltzmann distribution, Fermi-dirac and Bose-Einstein statistics etc. Enable students to know the polymer chemistry i.e. polymerization and chemistry of polymerization • Enable students to learn the chemistry of solid matter such as crystals and their properties. • Also enable students to learn the electronic and band theory. • Enable the students to learn the process of micellization and the adsorption phenomenon.
CHE.304	**Statistical Thermodynamics, Solid State, Polymer & Surface Chemistry**	• Enable students to learn about the sampling, collection, preservation, preparation and analysis. This also enables analytical data acquisition and statistical analysis of the data. • Enable students to learn the separation through extraction, instrumental separation technique viz chromatography TLC and HPLC. • Enable students to know the thermal and automated methods. • Enable students the learn the principle, instrumentation and application of the major electro analytical techniques viz pH potentiometry, conductometry, polarography, and voltametry.
Laboratory course - 1	**Physical Practical**	• Enable to understand the effect of various catalysts in chemical eactions. • Enable to determine solubility product, dissociation constant and basicity by conductometric method. • Enable to understand auto-catalytic reactions through various examples. • Eanble to calculate equilibrium constant from kinetic data.
Laboratory course – 2 & Internship	**Analytical Practical & Internship**	• Enable to determine composition and stability constant of complexes. • Enable to determine pH of various mixtures using different electrodes. • Enable to determine end point of titration between acids and bases by conductometric method. • Enable to determine the concentration of Elements like sodium, potassium etc. using flame photometer. • Benefits of professional training by internship.
CHE.401	**Instrumental Methods of**	• Enable to understand techniques and application of advanced

	Analysis	chromatography. • Enable to understand principles, instrumentation and application of x-ray and proton induced spectroscopy. • Enable to understand instrumentation and application of "atomic emission spectroscopy. • Enable to understand instrumentation and application of "atomic absorption spectroscopy
CHE.402	**Environmental & applied Chemical Analysis**	• Enable to understand classification, monitoring and analysis of air pollution . • Enable to understand quality standards, monitoring and analysis of soil and water pollution • Enable to understand food adulterants and techniques of food analysis. • Enable to understand action of drugs and analysis of drugs. • Enable to understand types of fuels and analysis of fuels.
CHE.403	**Catalysis Material & Nuclear Chemistry**	• Enable to understand chemistry of materials. • Enable to understand process of nuclear energy and process of nuclear fission Enable to understand types of fuels and its analysis. • Enable to understand application of nuclear chemistry in various fields. • Enable to understand techniques of detection of nuclear radiations.
CHE.404A	**Natural Product**	• Enable to understand the isolation, general methods of structure determination and synthesis of Terpenoids, Caretenoids and Alkaloids. • Enable to understand structure and synthesis of steroids. • Enable to understand the classification, general methods of structure determination and synthesis of Plant pigments, Anthocyanins and pyrrole pigments.
CHE.404B	**Medicinal Chemistry**	• Enable to understand steps of drug design and its activity. • Enable to understand pharmacokinetics and pharmacodynamics. • Enable to understand constitution and synthesis of antibiotics. • Enable to understand synthesis and properties of antimalaria.
Laboratory course - 1	**Organic Practical**	• Synthetic Strategies of organic compounds. • Enable to estimate Nitrogen from kjeldahl method. • Enable to estimate Sulphur by messenger's method. • Enable to estimate amino group, hydroxyl group by Acetylation method. • Isolation of various organic compounds like caeffine, caseine, and lactose etc. from natural sources.
Dissertation	**Dissertation/ Project**	• Enable to literature survey. • Oriented towards research and development.

DEPARTMENT OF COMPUTER SCIENCE

Govt. D. B. Girls P.G. College, Raipur, C.G.

Program Outcomes and Course Outcomes

PROGRAM: B. Sc. (Computer Science Physics, Mathematics)

PROGRAM CODE: BSCMP08

SCHEME OF PROGRAM AT A GLANCE

First Year:

Course	Course title	Theory Course Max Marks
BS1CS-01	Computer Fundamental	100
BS1CS-02	Programming in 'C'	100
	Total	200

Second Year:

BS2CS-01	Computer Hardware	50
BS2CS-02	Computer Software	50
BS2CS-03	Computer Software(Programming in C++ & HTML)	50
	Total	150

Third Year:

BS3CS-01	Computer Hardware	50
BS3CS-02	Computer Software	50
BS3CS-03	Computer Software(Programming in Visual Basic) & DBMS (SQL)	50
	Total	150

-----:: PROGRAM OUTCOMES :: ----

As BSc Computer Science (B.Sc CS) is one of the most popular programs in the IT field. After doing this programme students has the potential to propel their career.

It is a consistently growing field with a large variety of job opportunities both in India and abroad as the industry and demand grows. They have a bright opportunity of self entrepreneurship.

It is a three year long program and has been specifically designed for students looking for a career in computers. The course covers all aspects of computers right from the basic fundamentals of computers to database systems & advanced courses like C++, VB etc.

Further the students can choose variety of PG programme also to enhance their skills like MCA, M.Sc IT, M.Sc. CS etc.

PO1-	Learn how to organize information efficiently in the forms of outlines, charts, etc. by using appropriate software. Develop the skills to present ideas effectively and efficiently.
PO2-	Do Academic and Professional Presentations - Designing and delivering an effective presentation and developing the various IT skills to the electronic databases.
PO3-	Use the Systems Analysis Design paradigm to critically analyze a problem. Solve the problems (programming networking database and Web design) in the Information Technology environment. Function effectively on teams to accomplish a common goal and demonstrate professional behavior.
PO4-	Develop IT-oriented security issues and protocols. Design and implement a web page. Improve communication and business management skills, especially in providing technical support. Serve as the System Administrators with thorough knowledge of DBMS.

---:: PROGRAM SPECIFIC OUTCOMES ::--

SO1	Understand fundamentals concepts of computational thinking as well as knowledge of how computers and other digital devices are operated through interface as operating system.
PSO2	Be able to think logic of any real problem and able to implement it with programming concept. Student will able to integrate concepts of database, commerce, mathematics and statistics to store, summarize, analyze and interpret data for any real application.
PSO3	Get an appropriate level of oral, written and visual communication skills required for technocrats.
PSO4	Gain a thorough understanding or grasp key technologies for software application development.
PSO5	Apply knowledge and skills to develop software as a "model" or develop an application in the "software as a model" perspective.
PSO6	Understand efficient Query generation and acquire query optimization skills.
PSO7	Understand the concepts of Computer interconnectivity, sharing of resources, internet technologies and other network applications.
PSO8	Understand the electronic commerce and how electronic commerce is affecting business enterprises, governments, consumers and people in general.

arse Code	Name of course/Paper	Course outcome (should include one point for each unit of the paper)
BS1CS-01	Computer Fundamental	Basic knowledge of computer system ,its generation, evolution How to create document using MS word and using different menus so that students able to create their own documents Apply standard statistical inference procedures to draw conclusions from data in MS excel They came to know how to present their views through multimedia using MS PowerPoint Retrieve information and create reports from databases and determine effective ways of securing, managing and transferring data though MS access
BS1CS-02	Programming in 'C'	Basic concept of c programming language How to handle control statement and uses of functions how to use and handle array,structure,union and string knowledge about pointers how to handle file in c language and uses of preprocessors
		Internal organization of computer Understand the internal architecture of central processing unit
BS2CS-01	Computer Hardware	Deep Knowledge of memory organization Working of different types of processors and input output devices Basic knowledge of programming technique
BS2CS-02	Computer Software	How to design web page and different types of elements used in web page designing Learn about How to link different web pages and images Introduction of Object oriented programming got to know about basic concept of object, class and inheritance Basic concept of virtual function so learning the concept of polymorphism
BS3CS-01	Computer Hardware	Basic concept of microcomputer and microprocessor Through details of motherboard and video display Working of ROM BIOS services and Operating system How to handle disk and files under DOS and memory allocation Knowledge about different types of interrupts and filter in DOS
BS3CS-02	Computer Software	Basic knowledge of data and what Data Base management system is and data models Thorough details of RDBMS and how to normalize database How to make database and different types of queries and commands used in sql/plsql Basic knowledge of GUI programming ,working of IDE n file handling in visual basic How to do Database Connectivity with application program and how to create report

Program Outcomes and Course Outcomes

PROGRAM: PGDCA

PROGRAM CODE: PGDCA01

SCHEME OF PROGRAM AT A GLANCE

First Year:

Course	Course title	Theory Course
		Max Marks
PGDCA-101	Fundamentals of Computers	100
PGDCA-102	Office Automation & Tally	100
PGDCA-103	Programming in "C".	100
PGDCA-104	Practicals based on PGDCA-102 (Office Automation & Tally)	100
PGDCA-105	Practicals based on PGDCA-103 (Programming in "C")	100
	Total	**500**

Second Year:

PGDCA-106	Programming in VB.Net.	100
PGDCA-107	Database Management System	100
PGDCA-108	Internet and Web Technology	100
PGDCA-109	Practical based on PGDCA106	100
PGDCA-110	Practical based on PGDCA107 and PGDCA 108	100
	Total	**500**

-----:: PROGRAM OUTCOMES :: ----

The P.G. Diploma aims to educate student with problem solving using computer science and technologies. It aims to provide technology-oriented students with the ability to develop software solutions and technology. This program develops human resource for IT industries as well as equipped students to start their own business as a software developer, database administrator, programmer, system analyst. After completing the course students come to know about basic knowledge of computer system and variety of computer languages, so after they can apply on multiple companies of their choices and also can apply for further studies like MCA, M.Sc CS etc.

Programme Specific Outcomes (PSOs):

PSO1	Students will be able to understand the evolution and generations of computer, instruction set (RISK and CISC), memory and its organization and types of memory.
PSO2	Students will be able to demonstrate and apply their knowledge of C++, VB.Net and Database programming to develop effective software solutions needed for the government organizations, industrial, societal and environmental application areas.
PSO3	Students will be able to learn principles of management which includes organization, planning, product design, development, maintenance, marketing and project management.
PSO4	Students will be able to demonstrate adequate skills in oral and written communication for technical English language, actively participate in group discussions and interviews and exhibit the evidence of vocabulary building.
PSO5	Students will be able to analyze system by sampling and investigating hard data. Also students will be able to identifying, forecasting/ comparing cost and or benefits for system under study.
PSO6	Students will be able to understand data communication concepts and its applications. Network architecture, transmission of data, OSI models, layers and protocols study equipped students with know-how on troubleshooting in computer hardware and network related issues.

Course Code	Name of course/Paper	Course outcome (should include one point for each unit of the paper)
PGDCA 101	Fundamentals of computer	Basic introduction of computer Deep knowledge of different types of computer peripherals Introduction Of CPU and its components with details of storage devices Concept of different types of software's and computer languages Details of LINUX Operating system and commands
PGDCA 102	Office Automation and tally	How to create document using MS word and using different menus so that students able to create their own documents Apply standard statistical inference procedures to draw conclusions from data in MS excel They came to know how to present their views through multimedia using MS PowerPoint Retrieve information and create reports from databases and determine effective ways of securing, managing and transferring data though MS access Accounting software to maintain company accounts ,recording financial transaction,prepreraing annual statements
PGDCA 103	Programming in 'C'	Basic concept of c programming language through which learnt about basic things of programming How to handle control statement and uses of functions to understand about flow of programs How to use and handle array, pointers and string knowledge about structure and union so that memory can be used in very efficient way how to handle file in c language and utilization of memory though dynamic memory allocation
PGDCA 106	Programming in VB.net	NET framework is used to create n run software application To create MDI application, different controls to meet users requirement Get to know about flow of control of programs and dealing with exceptions of programs and solving errors GUI is a form of user interface that allows users to interact with devices through graphical icons Apply standard statistical inference procedures to draw conclusions from data Retrieve information and create reports from relational databases.
PGDCA 107	Database Management System	To get details about what data is how we get knowledge from data and make database and different database languages ER diagram are used to model and design relational database in terms of logic and business rule Relational database is a actual implementation of database through which we retrieve, manipulate data Normalization is a process of eliminate data redundancy in database so that data will in managing form SQL enables users to create,read,update,retrieve and delete relational database and tables
PGDCA 108	Internet and Web Technology	Calculating numeric conversions between binary, decimal and hexadecimal base numbers related to memory addresses, memory data type representation. Internet evolution and its various application area and how the internet service provider works how it works via different protocols Design basic business web pages using current HTML/CSS coding standards. Analyse techniques to determine effective ways of securing and managing data. E-commerce is conducted using variety of application and their different areas of usage.

DEPARTMENT OF MATHEMATICS

Govt. D. B. Girls P.G. College, Raipur, C.G.

Program Outcomes and Course Outcomes

PROGRAM: B. Sc. (Mathematics, Physics, Chemistry/Computer Science /Geography)

PROGRAM CODE: BSPCM01

SCHEME OF PROGRAM AT A GLANCE

First Year:

Course	Course title	Theory Course
		Max Marks
BA/BSM1-01	Calculus	100
BA/BSM1-02	Algebra	100
	Total	200

Second Year:

BA/BSM2-01	Advanced Calculus	50
BA/BSM2-02	Differential Equations	50
BA/BSM2-03	Mechanics	50
	Total	150

Third Year:

BA/BSM3-01	Analysis	50
BA/BSM3-02	Abstract Algebra	50
BA/BSM3-03	Discrete Mathematics	50
	Total	150

-----:: PROGRAM OUTCOMES :: ----

Bachelor's degree in mathematics is the culmination of in-depth knowledge of algebra, calculus, geometry, differential equations and several other branches of mathematics. This also leads to study of related areas like computer science and statistics. Thus, this programme helps learners in building a solid foundation for higher studies in mathematics. The skills and knowledge gained has intrinsic beauty, which also leads to proficiency in analytical reasoning. This can be utilized in modelling and solving real life problems. Students undergoing this programme learn to logically question assertions, to recognize patterns and to distinguish between essential and irrelevant aspects of problems. They also share ideas and insights while seeking and benefitting from knowledge and insight of others. This helps them to learn behave responsibly in a rapidly changing interdependent society. Students completing this programme will be able to present mathematics clearly and precisely, make ideas precise by formulating them in the language of mathematics,

Describe mathematical ideas from multiple perspectives and explain fundamental concepts of mathematics to non-mathematicians. Completion of this programme will also enable the learners to join teaching profession in primary and secondary schools. This programme will also help students to enhance their employability for government jobs, jobs in banking, insurance and investment sectors, data analyst jobs and jobs in various other public and private enterprises. They have a bright opportunity of self entrepreneurship.

PO1-	Knowledge domain: Demonstrate an understanding of the basic concepts in mathematics, statistics, operations research and their importance in the solution of some real- world problems.
PO2-	Problem analysis: Analyze and solve the well-defined problems in mathematics statistics, and operations research. Utilize the principles of scientific enquiry, thinking analytically, clearly and critically, while solving problems and making decision. Find, analyze, evaluate and apply information systematically and shall make defensible decisions.
PO3-	Presentation and Interpretation of Data: Demonstrate the ability to manipulate and visualize data and to compute standard statistical summaries.
PO4-	Modern tool usage: Learn, select, and apply appropriate methods and procedures, resources and computing tool such as Excel, MATLAB, MATHEMATICAL, SPSS etc with an understanding of the limitations.
PO5-	Ethics: Analyze relevant academic, professional and research ethical problems and commit to professional ethics and responsibilities with applicable norms of the data analysis and research practices.

PO6-	Communication: Effectively communicate about their field of expertise on their activities, with their peer and society at large. Such as, being able to comprehend and write effective reports and design documentation, make effective presentations.
PO7-	Project Management: Apply Knowledge and understanding of principles of mathematics and statistics effectively as an individual, and as a member or leader in diverse teams to manage projects in multidisciplinary environment
PO8-	Research Proposal: Define, design and deliver a significant piece of research work that is clear and concise. Demonstrate the necessary skills and knowledge of deeper understanding of their chosen research area. Understand the philosophy of research in mathematical sciences and appreciate the value of its development.
PO9-	Effective Citizenship: Responsible for learning, develop honesty in work and respect for self and others. Function effectively as an individual member or leader in diverse teams and in multidisciplinary settings towards the development of the society or nation
PO10-	Self-directed and Life-long Learning: Study incessantly by self to cope with growing competition for higher studies and employment. Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the academic, organization as well society context of environmental & scientific change.

---:: PROGRAM SPECIFIC OUTCOMES ::--

After the successful completion of UG programs in Mathematics the students will be able to:

- Enabling students to develop a positive attitude towards mathematics as an interesting and valuable subject of study.

- A student should get a relational understanding of mathematical concepts and concerned structures, and should be able to follow the patterns involved, mathematical reasoning.

- Ability to analyze a problem, identify and define the computing requirements, which may be appropriate to its solution.

- Introduction to various courses like group theory, ring theory, field theory, metric spaces, number theory.

- Enhancing students' overall development and to equip them with mathematical modelling abilities, problem solving skills, creative talent and power of communication necessary for various kinds of employment.

- Ability to pursue advanced studies and research in pure and applied mathematical science.

---:: COURSE OUTCOMES ::---

Course Code	Name of course/Paper	Course outcome (should include one point for each unit of the paper)
BA/BSM1-01	Calculus	**Calculus** is also used to gain a more precise understanding of the nature of space, time, and motion The study of differential equations is a wide field in pure and applied mathematics, physics, and engineering. Many fundamental laws of physics and chemistry can be formulated as differential equations. Applications of integral calculus include computations involving area, volume, arc length, centre of mass, work, and pressure. More advanced applications include power series and Fourier series..
BA/BSM1-02	Algebra	Matrices are a notable example of a common thread in Mathematics. Theory of Equations comprises a major part of traditional algebra. Group theory consist study of algebraic structures. A ring theory is one of the fundamental algebraic structures used in abstract algebra. De Moivre's theorem gives a formula for computing powers of complex numbers
BA/BSM2-01	Advanced Calculus	Define various theorem of sequence in advanced calculus.The notion of continuity and differentiability is a pivotal concept in calculus because it directly links and connects limits and derivatives.Partial derivatives are used in vector calculus and differential geometry. Double and triple integrals determine area and volume.
BA/BSM2-02	Differential Equations	Power series is an important application in the field of engineering spectrum analysis. Partial differential equations are used to mathematically formulate, and thus aid the solution of, physical and other problems involving functions of several variables, such as the propagation of heat or sound, fluid flow, elasticity, electrostatics, electrodynamics. The transform has many applications in science and engineering because it is a tool for solving differential equations. The calculus of variations is a field of mathematical analysis that uses variations, which are small changes in functions and functional, to find maxima and minima of functional, mappings from a set of functions to the real numbers.
BA/BSM2-03	Mechanics	Static mechanics analysis of loads acting on physical systems that do not experience an acceleration, but rather, are in static equilibrium with their environment. The motion of celestial bodies as well as manmade objects such as space probes, satellites etc are the fields where mechanics is the Base.
BA/BSM3-01	Analysis	**Real Analysis** enables the necessary background for Measure Theory. Measure theory is further used in the study of Stochastic Differential Equations (Finance, Signal Processing), Stochastic Geometry (Wireless Communications), Topology (Topological Data **Analysis**) and many more. Complex analysis, in particular the theory of conformal mappings, has many physical applications and is also used throughout analytic number theory. Another important application of complex analysis is in string theory which studies conformal invariants in quantum field theory. Understand several standard concepts of metric spaces and their properties like openness, closed ness, completeness, Bolzano Weierstrass property, compactness, and connectedness. Identify the continuity of a function defined on metric spaces and homeomorphisms
BA/BSM3-02	Abstract Algebra	Understand the basic concepts of group actions and their applications. Recognize and use the Sylow theorems to characterize certain finite groups. Know the fundamental concepts in ring theory such as the concepts of ideals, quotient rings, integral domains, and fields. Learn in detail about polynomial rings, fundamental properties of finite field extensions, and classification of finite fields.
BA/BSM3-03	Discrete Mathematics	Learn about partially ordered sets, lattices and their types. Understand Boolean algebra and Boolean functions, logic gates, switching circuits and their applications. Solve real-life problems using finite-state and Turing machines. Assimilate various graph theoretic concepts and familiarize with their applications.

DEPARTMENT OF MATHEMATICS

PROGRAM: M.Sc. Mathematics

Program Outcomes, Program Specific Outcomes and Course Outcomes

PROGRAM: M. Sc. Mathematics PROGRAM CODE: MSMAT03

-----:: PROGRAM OUTCOMES :: ----

Programme Outcomes (PO's): Programme outcomes describe what students are expected to know or be able to do by the time of Post graduation. On completion of M.Sc. Mathematics programme student will be able to:

PO1	Various branches of Mathematics are so selected and designed for M.Sc Mathematics course aiming at mathematical reasoning, sophistication in thing and acquaintance with enough number of subjects including application oriented ones to suit the present needs of various allied branches in Engineering and Science as well as provision of opportunities to pursue research in higher mathematics.
PO2	Problem Solving Skills This programme also offers training in problem solving skills.
PO3	Analytical & Logical thinking The student will be able to develop logical reasoning techniques and Techniques foranalyzing the situation.
PO4	Advanced Algebra The students shall appreciate the necessity of various Algebraic structures with binary operations such as Group, Ring, Non-commutative ring that lead to new ideas in algebra for their future research in advanced topics of algebra.
PO5	Analysis The student shall get an insight in the behavior of curves defined on a closed and bounded interval and some important properties of continuous, monotonic, and differentiable functions defined on a closed and bounded interval and also their metric space analogues.
PO6	Numerical Techniques The student will be able to learn some useful approximation and interpolation techniques in Mathematics.
PO7	Advanced Discrete Mathematics The student will learn concepts like finite state machine, Boolean algebra, lattice which develop more useful logic in the development of theories of electronic computers, networks, switching circuits that are applicable in Physics.
PO8	Learning Number theoretical concepts Student will learn some important concepts in Number theory that are useful in Cryptography related to the advanced area of research namely Network security.
PO9	Understanding Ability Student will develop ability for generation of mathematical model to a given real life situation as well as learning new areas of mathematics in future either for teaching or for research.
PO10	Getting Abilities Demonstrate the ability to conduct research independently and pursue higher studies towards Ph.D. degree in mathematics.
PO11	Evaluating capability The student shall acquire capability to evaluate hypothesis, methods and evidence within their proper contexts in any situation.
PO12	Application of knowledge The student shall able to apply the knowledge acquired in mathematics in Science, technology as well as research and its extensions.

--:: PROGRAM SPECIFIC OUTCOMES ::--

PSO1-	Understanding of the fundamental axioms in mathematics and capability of developing ideas based on them.
PSO2-	Inculcate mathematical reasoning.
PSO3-	To develop ones own learning capacity.
PSO4-	Prepare and motivate students for research studies in mathematics and related fields.
PSO5-	Develop abstract mathematical thinking
PSO6-	Assimilate complex mathematical ideas and arguments.

---:: COURSE OUTCOMES ::---

Course Code	Name of course/Paper	Course outcome (should include one point for each unit of the paper)
MATH/101	Advanced Abstract Algebra (I)	Understand the basic concepts of group series and their applications. Fundamental properties of finite field extensions, and classification of finite fields. How to test if a polynomial is irreducible Galois Fields
MATH/102	Real Analysis (I)	Basic definition of metric space, norm linear space and inner product space. Series and sequence of continuous functions. Equicontinuous families, Arzela-Ascoli Theorem and Stone-Weierstrass Theorem. Function of several variables and differedifferentiation in Rn.
MATH/103	Topology	Define topological spaces, product topology, metric topology, quotient space. Discuss the continuous functions, connected space, compact space, complete metric space, related theorems on Baire space. Describe closed sets and limit points, components and path components. Prove Urysohn's lemma, Urysohn's metrization theorem, Nagata-Snirnov metrization theorem, Ascoli's theorem. Understand the separation axiom, a space filling curve. Distinguishing spaces up to homeomorphisms.
MATH/104	Complex Analysis (I)	Differentiation of functions on C, deciding if a function on C is analytic. Development of functions into power series, classifying singularities. Integration of functions on C, applications to counting zeros and poles. Evaluation of indefinite real integrals using complex analysis. Constructing Mobius transformations mapping given circles to given circles.
MATH/105	Advanced Discrete Mathematics(I)	Define Semigroups, Monoids, Homomorphism and Isomorphism. Describe the TF statements, connectives, atomic and compound statements. Illustrate Tautology, Tautological implication, Truth Tables, Normal Forms, Principal Normal Forms. Discuss the theory of inference, quantifiers, predicate calculus. Interpret Lattices, Boolean Algebra, Karnaugh Map, Switching Circuits.
MATH/201	Advanced Abstract Algebra (II)	Module theory as linear algebra over general rings. Basic preparation various research areas in pure mathematics like algebraic geometry, Algebraic Number Theory, Topology etc. Theory of modules over PID and its application to Jordan and Rational canonical forms.
MATH/202	Real Analysis (II)	Idea about Partial differential equation and link to partial derivatives. Idea about the solution of the Dirichlet problem for certain subdomains of Rn. Learn some of the properties of Riemann integrable functions, and the applications of the fundamental theorems of integration.
MATH/203	General and Algebraic Topology	Concept of homotopy of maps and topological spaces. Concept of chain complexes of abelian groups. Concept of homology and cohomology groups of spaces. Exposure to the language of categories and functors
MATH/204	Complex Analysis (II)	Viewing analytic functions as conformal mappings. Power series, zeros, singularities. Prove the local mapping theorem, maximum modulus principle, Residue theorem. Evaluate the integral using Cauchy's integral formula and Residue theorem. Find the Taylor's and Laurent's series expansion of given function. Show Jensen's formula.
MATH/205	Advanced Discrete Mathematics(II)	More advance topics in combinatorics: recurrence relations, generating functions, Polya's theorem, graphs, trees, topics in matching such as Marriage theorem. Ramsey theory, planar graph. Partially ordered set: Dilworth's theorem and extremal set theory. Application to real life problems such as network theory, data structure, optimization etc.

MATH/301	Integration theory and Functional Analysis(I)	Working with a complete orthogonal set a.k.a. Schauder basis in a Hilbert space. Investigating the best approximation of a given vector by vectors in a given subspace. Computing the dual spaces of certain Banach spaces. Know the basic convergence theorems for the Lebesgue integral. Understand the relation between differentiation and Lebesgue integration.
MATH/302	Partial Differential Equations and Mechanics (I)	Apply a range of techniques to solve first & second order partial differential equations. Model physical phenomena using partial differential equations such as the heat and wave equations. Understand problems, methods and techniques of calculus of variations.
MATH/303	Fundamentals of Computer Science	To learn about what oops concept is, creating class, objects ,hiding information using abstraction How to reuse the code using inheritance,polymorphism and generic programming Understanding the way of organizing data and accessing it through different data structure technique. Explaining the different sorting technique of data and different data storage purpose using tree concept
MATH/304	Operations Research (I)	Identify and develop operational research models from the verbal description of the real system. Understand the mathematical tools that are needed to solve optimisation problems. Use mathematical software to solve the proposed models. Develop a report that describes the model and the solving technique, analyse the results and propose recommendations in language understandable to the decision-making processes in Management Engineering
MATH/305	Programming in C (with ANSI features) (I)	Defining the concept of programming language and its features To get the understanding of different data types and its usage according to needs of program. To learn about the flow of execution of a C program. How to use and handle array through which know about how to utilize memory location and access data location
MATH/401	Functional Analysis (II)	Understand the normed linear spaces, B anach space and Dual spaces Understand inner product spaces, orthogonally and Hilbert spaces. Distinguish between finite and infinite dimensional spaces. Apply linear operators in the formulation of differential and integral equations.
MATH/402	Partial Differential Equations and Mechanics (II)	To learn about Hamilton's Principle. The Hamiltonian mechanics provides the framework of most modern research in frontier areas particularly the relation between symmetry proportion and conservation laws.
MATH/403	Operating System and Database Management System	Understanding the basic details of data and the architecture of database, data modelling. Learn about Relational database and actual implementation of database through which we retrieve, manipulate data. To understand the details of operating system and its functioning
MATH/404	Operations Research (II)	Understand the concept of convexity and generalized convexity. To derive the necessary conditions (KT conditions) for constrained nonlinear optimization problems. To solve quadratic, goal and multi-objective programming problems. Use search technique to find the optimal solution of unconstrained optimization problems.
MATH/405	Programming in C (with ANSI features) (II)	To learn about the scope and visibility of variables. Know about Pointers so can access and manage data addresses of dynamically allocated block of memory Gain knowledge of reusing the same logic and code using functions. To learn about the mechanism of File handling and knowledge about structure and union so that memory can be used in very efficient way

DEPARTMENT OF MATHEMATICS

PROGRAM: M.Sc. Physics

Program Outcomes, Program Specific Outcomes and Course Outcomes

PROGRAM: M. Sc. Physics PROGRAM CODE: MSPHY04

SCHEME OF PROGRAM AT A GLANCE

FirstSemester:

Course Code	Title	Marks						Credit Point	Total
		Theory		Test		Seminar			
		Max.	Min.	Max.	Min.	Max.	Min.		
PHY/101	Mathematical Methods - I	80	16	10	2	10	2	5	100
PHY/102	Classical Mechanics	80	16	10	2	10	2	5	100
PHY/103	Numerical Methods and Programming	80	16	10	2	10	2	5	100
PHY/104	Electronics - I	80	16	10	2	10	2	5	100
PHY/105	Lab course -A General	100							100
PHY/106	Lab course - B Electronics	100							100
	Total								**600**

Second Semester:

Course Code	Title	Marks						Credit Point	Total
		Theory		Test		Seminar			
		Max.	Min.	Max.	Min.	Max.	Min.		
PHY/201	Quantum Mechanics -I	80	16	10	2	10	2	5	100
PHY/202	Laser Physics and applications	80	16	10	2	10	2	5	100
PHY/203	Electrodynamics	80	16	10	2	10	2	5	100
PHY/204	Electronics - II	80	16	10	2	10	2	5	100
PHY/205	Lab course -A Computer Programming	100							100
PHY/206	Lab course - B Electronics	100							100
	Total								**600**

Third Semester:

Course Code	Title	Marks						Total
		Theory		Test		Seminar		
		Max	Min	Max	Min	Max	Min	
PHY/301	Quantum Mechanics - II	80	16	10	2	10	2	100
PHY/302	Statistical Mechanics	80	16	10	2	10	2	100
PHY/303	Solid State Physics	80	16	10	2	10	2	100
PHY/304	A.Electronics - III B. Physics of Nano material -I	80	16	10	2	10	2	100
PHY/305	Lab course -A Electronics	**100**						100
PHY/306	Lab course - B Digital Electronics	100						100
	Total							**600**

Fourth Semester:

Course Code	Title	Marks						Total
		Theory		Test		Seminar		
		Max	Min	Max	Min.	Max	Min.	
PHY/401	Solid State Physics - II	80	16	10	2	10	2	100
PHY/402	Atomic and Molecular physics	80	16	10	2	10	2	100
PHY/403	Nuclear and Particle physics	80	16	10	2	10	2	100
PHY/404	A. Electronics - IV B. Physics of Nano Material-II	80	16	10	2	10	2	100
PHY/405	Project	200						200
	Total							**600**

-----::PROGRAM OUTCOMES:: ----

Program Outcomes (PO's): Program outcomes describe what students are expected to know or be able to do by the time of Post graduation. On completion of M.Sc. Physics program student will be able to:

PO1	Apply the skill and knowledge in the design and development of electronic circuits to fulfill the needs of small scale electronic industry.
PO2	Demonstrate, solve and an understanding of major concepts in all disciplines of physics.
PO3	Solve the problem and also think methodically, independently and draw a logical conclusion.
PO4	Employ critical thinking and the scientific knowledge to design, carry out, record and analyze the results of Physics experiments.
PO5	Create an awareness of the impact of Physics on the society, and development outside the scientific community.
PO6	To inculcate the scientific temperament in the students and outside the scientific community.
PO7	Use modern techniques, computer and Microprocessor
PO8	Become professionally trained in the area of electronics, material science, lasers and nonlinear circuits.
PO9	Gain the knowledge to appear and qualify the different competitive exams such as NET, SET, GATE, PSC, UPSC, SSC, BANK, RAILWAYS, SCHOOL TEACHER EXAM etc

---::PROGRAM SPECIFIC OUTCOMES::--

PSO1-	M.Sc. Physics – 4 Semesters Postgraduate Programme Outcomes (PO), Programme Specific Outcomes (PSO), Course Outcomes (CO) **Semester-I** **PAPER –I MATHEMATICAL PHYSICS** In this course the student will: 1. Learn about special type of matrices that are relevant in physics and then learn about tensors. 2. Get introduced to Special functions like Delta function, Dirac delta function, Bessel functions and their recurrence relations. 3. Learn the fundamentals and applications of Fourier series, Fourier and Laplace transforms their inverse. 4. Learn different ways of solving second order differential equations and familiarized with singular points and Frobenius method transforms etc. 5. Know the method of contour integration to evaluate definite integrals of varying complexity. 6 To become familiar with the method of Green's function to solve linear differential equations with inhomogeneous term. **PAPER –II CLASSICAL MECHANICS** 1. This paper enables the students to understand 1 The Lagrangian and Hamiltonian approaches in classical mechanics. 2. The classical background of Quantum mechanics and get familiarized with Poisson brackets and Hamilton -Jacobi equation. 3. 3 Kinematics and Dynamics of rigid body in detail and ideas regarding Euler's equations of motion. 4. 4 Theory of small oscillations in detail along with basis of Free vibrations. 5. Basic ideas about Non linear equations and chaos. **PAPER –III ELECTRODYNAMICS AND PLASMA PHYSICS** 1. Have gained a clear understanding of Maxwell's equations and electromagnetic boundary condition 2. Know that laws of reflection, refraction are outcomes of electromagnetic boundary conditions. 3. Have grasped the idea of electromagnetic wave propagation through wave guides and transmission lines. 4. Extend their understanding of special theory of relativity by including the relativistic electrodynamics. 5. Understand the rather complex physical phenomena observed in plasma. **PAPER –IV ELECTRONIC** On completion of this course the student will learn about 1. Field Effect Transistors, their principles and applications. 2. Photonic devices like LED, Laser diode, photo detectors, solar cells etc and their working in detail. 3. Basic operational amplifier characteristics, OPAMP parameters ,applications as inverter, integrator, differentiator etc. 4. Digital electronics baiscsusing logic gates and working of major digital devices like flip flops, CMOS , CCD etc. 5. 5 Study the Organization and internal architecture of the Intel 8085.

Semester-II

PAPER –I QUANTUM MECHANICS -I

I After successful completion of this paper, the student will be well-versed in

1. Linear vector spaces, Hilbert space, concepts of basis and operators and bra and ket notation.
2. Both schrodinger and Heisenberg formulations of time development and their applications.
3. Theory of angular momentum and spin matrices, orbital angular momentum and Clebsh Gordan Coefficient.
4. Space-time symmetries and conservation laws, theory of identical particles.
5. Theory of scattering and calculation of scattering cross section, optical theorem, Born approximation, partial wave analysis etc.

PAPER –II STATISTICAL MECHANICS

The students should be able to,

1. Explain statistical physics and thermodynamics as logical consequences of the postulates of statistical mechanics.
2. Apply the principles of statistical mechanics to selected problems.
3. Grasp the basis of ensemble approach in statistical mechanics to a range of situations.
4. To learn the fundamental differences between classical and quantum statistics and learn about quantum statistical distribution laws.
5. Study important examples of ideal Bose systems and Fermi systems.

PAPER –III

ELECTRONICS & PHOTONICS DEVICES & OPTICAL MODULATORS

The students should be able to,

1. To learn the Special Bipolar Devices: Diac &Triac, SCR, UJT etc.
2. Explain the Unipolar Devices : JFET, MOSFET, MESFET etc.
3. Learn common applications of Photonic Devices.
4. Study the Optical modulator and display devices like luminescence , LCD etc.

PAPER –IV

COMPUTATIONAL PHYSICS & COMPUTER PROGRAMMING

The students should be able to,

1. Learn about the linear and nonlinear algebraic equation and their solution.
2. Apply the Newton cotes formula , Gauss method in polynomial equation.
3. Numerical solution of ordinary differential equation.
4. Elementary information about the digital computer principle and FORTRAN Programs.

Semester-III

PAPER –I QUANTUM MECHANICS – II

This course will enable the student to have basic knowledge about advanced techniques like

1. Approximation methods for time-independent problems like the WKB approximation.
2. The variational equation and its application to ground state of the hydrogen and Helium atom.
3. Perturbation theory and Interaction of an atom with the electromagnetic field.
4. Relativistic Quantum Mechanics using Dirac equation, Dirac matrices. The Klein Gordon equation etc.

PAPER –II ATOMIC & MOLECULAR SPECTROSCOPY

After successful completion of the course, the student is expected to:

1. Know about different atom model and will be able to differentiate different atomic systems, different coupling schemes and their interactions with magnetic and electric fields.
2. Have gained ability to apply the techniques of microwave and infrared spectroscopy to elucidate the structure of molecules.
3. Be able to apply the principle of Raman spectroscopy and its applications in the different field of science & Technology.
4. To become familiar with different resonance spectroscopic techniques and its applications.
5. To find solutions to problems related different spectroscopic systems.

PAPER –III SOLID STATE PHYSICS - I

After successful completion of the course, the student is expected to

1. Have a basic knowledge of crystal systems and spatial symmetries.
2. Know what phonons and be able to perform estimates of their dispersive and thermal properties , be able to calculate thermal and electrical properties in the free-electron model.
3. Know Bloch's theorem and what energy bands are and know the fundamental principles of semiconductors.
4. Know the fundamentals of dielectric and ferroelectric properties of materials.
5. Be able to explain superconductivity using BCS theory.

PAPER –IV ELECTRONICS

The students should be able to,

1. To learn about the Microwave devices like, Klystron, Magnetron
2. Explain the Microwave wave guide & components with their modes.
3. Use Microwave cavities in communication system and explain Transferred Electrons devices.
4. Learn about the Radar System.
5. Know Satellite Communication through the orbital satellite, geostationary satellite etc.

Semester-IV

PAPER –I NUCLEAR AND PARTICLE PHYSICS

After successful completion of the course, the student is expected to

1. Have a basic knowledge of nuclear size , shape , bindingenergy.etc and also the characteristics of nuclear force in detail.
2. Be able to gain knowledge about various nuclear models and potentials associated.
3. Acquire knowledge about nuclear decay processes and their outcomes. Have a wide understanding regarding beta and gamma decay.
4. Grasp knowledge about Nuclear reactions, Fission and Fusion and their characteristics.
5. Understand the basic forces in nature and classification of particles and study in detail conservations laws and quark models in detail.

PAPER –II LASER PHYSICS AND APPLICATIONS

After successful completion of the course, the student is expected

1. Have a basic knowledge of laser physics and their working process.
2. Learn about the many types of laser system such as solid state laser, gas laser, etc.
3. Study advanced in laser physics like giant pulse dynamic harmonic generation, optical mixing etc.
4. Explain the multi-photon processes.
5. Be able to gain knowledge about various application of laser.

PAPER –III SOLID STATE PHYSICS- II

This paper enables the students to understand

1. Grape knowledge about Plasmon’s, Polaritons.
2. Study the dielectric and ferroelectrics materials.
3. Learn about the advance in magnetism theory.
4. Have a gain the knowledge about the ferromagnetism and anti ferromagnetism.
5. Explain the optical processes and excitons and defects in crystal structure.

PAPER –IV ELECTRONICS

The students should be able to,

1. Be able to gain knowledge about the digital communication.
2. Explain the digital modulation techniques.
3. Study the Noise in Digital communication.
4. Learn about data transmission through PSK, FSK etc.
5. Understand the basic knowledge of PCM Transmission.

---::COURSE OUTCOMES::---

Course Code	Name of course/Paper	Course outcome (should include one point for each unit of the paper)
PHY/101	Mathematical Methods - I	I- Understanding of Matrices, eigen values and eigen vectors. II- Understanding of different theorems such as Cauchy - Riemann, Residue etc. III- Understanding of first and second order diffrential equation, and Green's functions. IV- Understanding of Legendre, Bessel, Hermite and Laguerre functions with their physical applications
PHY/102	Classical Mechanics	I- Understanding of mechanics of particle, equation of motion of particle and D'Alembert principle. II- Deduction of different Principle and equations from Hamilton variational principle. III- Capable to understand the applications of Hamilton equation of motion IV- Understanding of Hamilton - Jacobi differential equation and Poisson Bracket
PHY/103	Numerical Methods and Programming	I- Understanding of computational procedure and programming II- Understanding of different statements and different concept associated with different functions. III- Understanding of determination of zeros of linear, non linear, algebric equation and transcendental equations. IV- Understanding of numerical differential and Integration and Newton cote's formula
PHY/104	Electronics - I	I- Understanding of working of Transistor, JFET, MOSFET and UJT. II- Understanding of MIS diode, MOS diode and CC. III- Understanding of Microwave devices such as Tunnel diode, Gunn diode, Backward diode. IV- Understanding of Modulation and Demodulation.
PHY/201	Quantum Mechanics -I	I- Origin of Quantum theory and explanation of different phenomena on the basis of this theory. II- Some principles and theorems related with Quantum theory. III- Study of some physical quantity and problems on the basis of quantum mechanics. IV- Detailed study of hydrogen atom and its spectra on the basis of quantum mechanics
PHY /202	Laser Physics and applications	I- Basic idea of LASER and its parameters II- Study of different LASER systems. III- Advanced study of LASER physics. IV- Study of laser Physics in different fields
PHY /203	Electrodynamics	I - Capable to understand Maxwell's equation and wave propagation in different media II- Different phenomena related with wave propagation and boundary conditions. III- Understanding of Einstein theory of special relativity and it's covariant form.

		IV- Understanding of relativistic electrodynamics
PHY /204	Electronics - II	I- Study of different type of transistors. II- Understanding the working and characteristic of different phototransistors. III- Detail study of operational amplifier. IV- Parameters related with practical's of operational amplifier
PHY /301	Quantum Mechanics - II	I- Different approximation methods to determine the energy states of Hydrogen and Helium atoms Basic idea of scattering and its parameters. II- Study of different particles on the basis of time dependent perturbation theory. III- Understanding of relativistic quantum mechanics and its formulation
PHY /302	Statistical Mechanics	I - Foundation of statistical mechanics, microstates, macro states and theorems related with them. II- Basic idea of ensemble theory. III- Formulation of quantum statistics, theory of ideal gases and different statistics. IV- Ideal Bose and Fermi gases and their thermodynamics behavior
PHY /303	Solid State Physics	I- Theories and models for electron in solids and electronic properties. II- Effects and theory related with Fermi surfaces of metals. III- Lattice dynamics of mono atomic, diatomic gases and thermal properties. IV- Understanding of electron-phonon interaction and superconductivity
PHY /304	A. Electronics - III	I- Understanding of different number system and their conversion used in digital system. II- Understanding of different combinational logic circuits like adder, subtractor, coder, decoder, multiplexer, de-multiplexer. III- Understanding different sequential logic circuits like flip- flop, registers and counters. IV- Idea of digital to analogue and analogue to digital converters, basic idea of integrated circuits .
	B. Physics of Nano Materials – I	I- Understanding of Nano materials. II- Understanding of carbon nano tubes. III- Understanding of synthesis of nano-materials. IV- Understanding of different characterization of nano materials.
PHY /401	Solid State Physics II	I- Understanding of Plasmon's and Polariton's II- Understanding of Maxwell's equations for dielectric and ferroelectrics. III- General idea of die, Para-magnetism and different theory for them. IV- Understanding of Ferromagnetism and anti ferromagnetism
PHY /402		I- Understanding of Bohr theory of Hydrogen atom and Hydrogen like atom.

	Atomic and Molecular physics	II- Understanding of Zeeman effect, Paschen Back effect and Stark effect. III- Understanding of Rotational and Vibrational Spectra IV- Understanding of RotationalVibrational spectra and electronic spectra
PHY /403	Nuclear and Particle physics	I- Understanding of Nucleon - nucleon interaction and Nuclear forces. II- Understanding of Beta and Gamma decay and selection rules. III- Understanding of different nuclear model such as liquid drop, shell model etc Understanding of elementary particle and Quark model
PHY /404	A. Electronics - IV	I- Understanding of memory, magnetic memory and networking in microprocessor. II- Understanding of Intel 8085 and time diagram. III- Understanding of instruction set of 8085 and addressing modes. IV- Understanding of Optical fiber and types of optical fiber
PHY/404	B. Physics of Nano Materials-II	I- Understanding of electrical transport in nano-structure II- Understanding of application of CNT. III- Understanding of applications of polymeric nanofibres. IV- Understanding of Sustainable use of Nanotechnology

DEPARTMENT OF PHYSICS

Govt.D. B. Girls P.G. College, Raipur, C.G.

Program Outcomes and Course Outcomes

PROGRAM: B.Sc. (Physics, Mathematics, Chemistry/Computer Science /Geography)

PROGRAM CODE:BSPCM01

SCHEME OF PROGRAM AT A GLANCE

First Year:

Course	Course title	Theory Course
		Max Marks
BS1PHY01	Mechanics, Oscillations and General Properties of matter	50
BS1PHY02	Electricity, Magnetism and Electromagnetic theory	50
BS1PHYP	Group A and Group B	50
	Total	150

Second Year:

BS2PHY01	Thermodynamics ,Kinetic theory and stastical physics	50
BS2PHY02	Waves, acoustics and optics	50
BS2PHYP	Group A and Group B	50
	Total	150

Third Year:

BS3PHY01	Relativity, Quantum mechanics, atomic, Molecular and Nuclear Physics	50
BS3PHY02	solid state Physics, solid state devices and Electronics	50
BS3PHYP	Group A and Group B	50
	Total	150

-----::PROGRAM OUTCOMES:: ----

PO1-	Demonstrate, solve and an understanding of major concepts in all disciplines of physics.
PO2-	Solve the problem and also think methodically, independently and draw a logical conclusion.
PO3-	Employ critical thinking and the scientific knowledge to design, carryout, record and analyze the results of Physics experiments.
PO4-	Create an awareness of the impact of Physics on the society, and development outside the scientific community.
PO5-	To inculcate the scientific temperament in the students and outside the scientific community.
PO6-	Gain the knowledge to appear and qualify the different competitive exams such as PSC, UPSC, SSC, BANK, RAILWAYS, SCHOOL TEACHER EXAM etc.

---::COURSE OUTCOMES::---

Course Code	Name of course/Paper	Course outcome (should include one point for each unit of the paper)
BS1PHY01	Mechanics, Oscillations and General Properties of matter	Grasping the fundamentals of different types of frames and transformation laws, different type of coordinate systems
BS1PHY02	Electricity, Magnetism and Electromagnetic theory	Students are expected to understand the use of mathematical operators-gradient, divergence and curl, understanding of different theorems for complicated circuits
BS2PHY01	Thermodynamics ,Kinetic theory and statistical physics	Become familiar with laws of thermodynamics and various thermo dynamical processes
BS2PHY02	Waves, acoustics and optics	understanding of geometrical optics, image formation ,aberrations in images, optical instruments
BS3PHY01	Relativity, Quantum mechanics, atomic, Molecular and Nuclear Physics	capable to understand the origin of quantum theory and get the knowledge about wave properties of particles De Broglie waves and its application
BS3PHY02	solid state Physics, solid state devices and Electronics	Understanding of electron model of metals, kronig - penny model, semiconductors, magnetic theory and principles for substances

---::PROGRAM SPECIFIC OUTCOMES::--

PSO1-	Program Specific Outcomes (PSO) PSO1. The students after the completion of this program will be able to understand and apply the fundamentals of Mechanics, Oscillation and Properties of Matter. PSO2. The students after the completion of this program will be able to understand and apply the fundamentals of Electricity, Magnetism and Electromagnetic Theory. PSO3. The students after the completion of this program will be able to understand and apply the fundamentals of Thermodynamics, Kinetic Theory and Statistical Physics. PSO4.The students after the completion of this program will be able to understand and apply the fundamentals of Wave, Acoustics and Optics. PSO5.The students after the completion of this program will be able to understand and apply the fundamentals of Relativity, Quantum Mechanics, Atomic, Molecular and Nuclear Physics. PSO6.The students after the completion of this program will be able to understand and apply the fundamentals of Solid State Physics, Solid State Devices and Electronics.

DEPARTMENT OF ZOOLOGY

Part I: Course outcome (Session 2022 - 23)

Name of Course UG/PG Level	Course/ Paper	Paper Code	Name of course/Paper	Course outcome (should include one point for each unit of the paper)
B.Sc. Level Course				
B.Sc. I Year Zoology	Paper I	BSCZOO(T) 101	Animal Diversity: Non-Chordata and Chordata, Comparative Anatomy and Physiology of Non-chordates	**This course is designed to understand the structures and purposes of basic Animal Diversity of Non-Chordata and Chordata, Comparative Anatomy and Physiology of Non-Chordates. The paper enhance knowledge on the following topic:** Upon completion of the course students should be able to enhance knowledge on the following topic: 1. Learn about the importance of systemic, taxonomy and phylogeny to get a concrete idea of evolution of non-chordate phyla. 2. Understand the various morphological, anatomical structures and functions of animals of different phyla. 3. Get the knowledge about economic,ecological and medical significance of various animals in human welfare. 4. Understand the important parasites and their control measures. Comparison of the anatomy and physiology of the different taxa of non-chordates
B.Sc. I Year Zoology	Paper II	BSCZOO(T) 102	Cell Biology, Histology and Comparative Anatomy & Physiology of Chordates	**This course is designed to understand the structures and purposes of basic components of prokaryotic and eukaryotic cells, especially macromolecules, membranes, and organelles, how these cellular components are used to generate and utilize energy in cells. Anatomy & Physiology gives students in-depth instruction in the organization structures, and functions of the human body. Students will learn the terminology, anatomy and physiology, and pathology of each body system and how they interrelate to maintain homeostasis. The paper develops understanding of students under following topics:** At the end of this course, the students will be able - 1. Understand the basic structure, functioning of the cell and cell organelles and understand the intricate cellular mechanisms involved. 2. Understand the tissues, how tissues are produced from cells in a normal course and about any malfunctioning which may lead to benign or malignant tumor. 3. Understand the Structure and function of integument, skeletal, digestive, circulatory system 4. Understand the Structure and function of circulatory, respiratory, excretory, reproductive and endocrine system

B.Sc. II Year Zoology	Paper I	BSCZOO(T) 103	Genetics, Developmental Biology & Evolution	**The course is designed to know basic concepts of Genetics. Some key aspects include the mechanism of inheritance, gene structure and function, sex chromosomal and autosomal anomalies, aspects of human genetics.** **The course also explains the sequence of events starting with a single cell to the production of a very complex organism. The course describes how embryos develop (embryology), and highlights how the processes of development are brought about by changing individual cells into various types of specialized cells with specific functions (the cellular level), and how evolution has taken place on this Earth** After successfully completing this course, the students will be able to 1. Apply the principles of Mendelian inheritance on interaction of genes. Various methods of sex determination in animal kingdom. 2. Understand the cause and effect of alterations in chromosome number and structure. 3. Know the Recent Assisted Reproductive Techniques 4. Develop critical understanding how a single-celled fertilized egg becomes an embryo and then a fully formed adult by going through three important processes of cell division, cell differentiation and morphogenesis.
B.Sc. II Year Zoology	Paper II	BSCZOO(T) 104	Biochemistry and Molecular Biology	**The course provides an introduction to the structure of biomolecules with emphasis on the techniques used for structure determination and analysis. The course covers basic aspects of sample preparation for analysis and aims to enlighten the students how structural information can be utilized for better understanding of biological processes. To understand about the importance and scope of biochemistry.** At the end of this course, the students will be able 1. Understand the structure and biological significance of carbohydrates, amino acids, proteins, lipids and nucleic acids. 2. Understand the concept of enzyme, its mechanism of action and regulation. Learn the preparation of models of peptides and nucleotides 3. Learn biochemical tests for amino acids, carbohydrates, proteins and nucleic acids. 4. Develop an understanding of concepts, mechanisms and evolutionary significance and relevance of molecular biology in the current scenario and Understand the process of DNA replication, transcription and translation.

B.Sc. III Year Zoology	Paper I	(Paper code-0917)	Ecology, Environmental Biology, Toxicology, Microbiology, Medical Microbiology	**This course will take students on a journey through the physical workings of the Earth, the interactions between species and their environments. The paper highlights on some of the important aspects viz. growth and survival of populations and communities in different habitats, energy flow in the ecosystems, interactions between the communities, exclusion of niches and consequences of changing environment on the biodiversity. Microbiology being the study of microorganisms such as viruses, bacteria etc., covers theoretical studies and practical proficiency training which may help in their placement at a clinical microbiological laboratory after advance study. The students will also get introduced to the toxicological analysis and the signs and symptoms of important toxic syndromes. The students will also study the basic toxicokinetic principles and metabolic systems to elucidate mechanisms of toxicity induced by xenobiotic compounds. The paper covers the following topics in details:** 1 Ecology, Environmental Biology, Different Eco-system, Biological cycle and Air and Water pollution 2 Limiting factors, Food chain, Energy flow, Fresh water ecosystem,conservation of Nagural Resources and Environmental Impect Assesment 3 Classification of Toxident and its Impacts on Human, Snake, Scorpio and Bees Vennom. Food poisining 4 Domestic & Sewage Microbiology. Microbiology of Milk and Milk product. Industrial microbiology 5 Medical microbiology - Pathogenic Protozons & Helminths
B.Sc. III Year Zoology	Paper II	(Paper code-0918)	Genetics, Cell Physiology, Biochemistry, Biotechnology and Biotechniques	**The course is designed to revise basic concepts of Genetics and then move on to advanced concepts. Some key aspects include the mechanism of inheritance, gene structure and sex chromosomal and autosomal anomalies, aspects of human genetics, etc. will be covered. It elaborates on physiology at cellular and system levels. The course provides an introduction to the structure of biomolecules with emphasis on the techniques used for structure determination and analysis. The course covers basic aspects of sample preparation for analysis and aims to enlighten the students how structural information can be utilized for better understanding of biological processes. The paper elucidate the following topics in detail:** 1 Linkage, Gene expression - Multiple alleles, Mutation & Chromosomal Alteration 2 pH & Buffers, Transport across Membrane - Cell membrane, Mitochodria, Endoplasmic Reticulam, Active & Passive Transport mechanism, Hydralytic Enzyme. 3 Structure & Metabolism of Amino Acid, Peptide, Protein, Carbohydrate, and Lipids. 4 Recmbinant DNA & Gene Cloning. Application of Biotechnology in Pharmacy & Food Procesing Industries 5 pH, Colorimeter, Centrifuge, Chromatography, Gel electrophoresis. Histochemical methods for determination of Protein , Lipid and Carbohydrate

M.Sc. 1st Semester Zoology	Paper I	ZOO101	Biosystematics and taxonomy	**The course will provides a comprehensive survey of the theory and methodology of systematics as they are applied today to all groups of organisms. The course is directed at those students interested in studies of evolutionary biology, biodiversity, conservation biology, and/or systematics. The paper Comprehend the basic concepts of animal taxonomy and zoological nomenclature.** 1 Chemo, Cyto & Molecular Taxonomy, 2 Speciation & Biological Classification 3 International code of Zoological Nomenclature. Types of Hot spot and Treats. Conservation. 4 Types of Hot spot and Treats to Conservation
M.Sc. 1st Semester Zoology	Paper II	ZOO202	structure and function of invertebrates	**The paper Comprehend the basic concepts of animal taxonomy and zoological nomenclature.The purpose of the paper is to understand inner working of living-beings by comparing various systems within invertebrates. It explain the fundamentals of the topics: The following topics gets covered under this paper:** 1 Organization of coelome, Locomotion. 2 Respiration, Nutrition and Digestion in invertebrate. 3 Excretory substance ,excretion. 4 Nervous system of Invertebrate. Invertebrate Larvae and Minor phyla.
M.Sc. 1st Semester Zoology	Paper III	ZOO103	General Comperative & Molecular Endocrinology of Vertebrates	**The course provides an insight into the structure and function of Endocrine systems in humans and their involvement in body metabolism towards maintenance of homeostasis. It provides in-depth knowledge on following topics:** 1 AIMS & Scope of Endocrinology, Discovery and Classification of Hormone. Comperative morphology of Endocrine Tissue. 2 Biosynthesis, Release, Trasport, Termination, Metabolism, Recepter mechanism and Action mechanism of Hormone. 3 Neuroendocrine system, Synthesis, Function and disorder of Neurohormone and Endocrine gland Hormone.Hormone of Heart and synthesis and function of Eicosanoid. 4 Metabolic activities of Hormone, Role of in Fasting. Behaviour, Growth and Development.

M.Sc. 1st Semester Zoology	Paper IV	ZOO104	Gamete Biology & Reproduction Physiology	**The course is designed for the students to make them aware of the induced release of gametes, multiple ovulation, superovulation, in vitro oocyte maturation and cryopreservation of gametes and embryos. The course explains the sequence of events starting with a single cell to the production of a very complex organism. The course not only describes how embryos develop , but also highlights how the processes of development are brought about by changing individual cells into specialized cells with specific functions (the cellular level), and how genes within the genome of the organism drive and guide these changes (the molecular level)..The following topics gets covered under this paper:** 1. Sex Differentiation (Genetical, Gonadal, Phenotypic & Brain sex). Reproductive Cycle & Oogenesis. 2 Male Reproductive system and Endocrine function in Male 3. Female Reproductive system and Ovarian Hormones 4. Fertilization, Parturition, Lactation and Hormonal Contraception. Placenta and its Endocrine function. Role of Hormones in Pregnancy..
M.Sc. 2nd Semester Zoology	Paper I	ZOO201	Molecular Biology & Biotechnology	**The course provides an insight into the life processes at the subcellular and molecular levels. Other important aspects include DNA and molecular genetics including gene cloning, sequencing and gene mapping. It envisages concepts, mechanisms, biological designs, functions and evolutionary significance of genetic modification or manipulation in special organisms and also discusses the recent advance in recombinant DNA technology. The following topics gets covered under the paper:** 1 Biomembrane, Mitochondria, Galgi Apparagus, Lysosome and Ribosome 2 DNA Replication, Transcription, and Translatiom 3 Genomic Organization & Molecular Mapping of Genome 4 Transgenic animals. Knockout gene. & Genetic engineering.
M.Sc. 2nd Semester Zoology	Paper II	ZOO202	Environmental Biology & Environmental Physiology	**This course will take students on a journey through the physical workings of the Earth, the interactions between species and their environments. The course highlights on some of the important aspects viz. growth and survival of populations and communities in different habitats, energy flow in the ecosystems, interactions between the communities, exclusion of niches and consequences of changing environment on the biodiversity. This paper also enhance the knowladge of student in terms of adoption and stress physiology elucidating following feilds of Zoology:** 1. Scope of Ecology and Ecosystem & its types and function. Energy flow, Food chain, Food web, & Ecological succession. Carbon, Oxygen, Nitrogen & Water Cycle 2 Population & Community Dynamics. Renewable & Non Renewable Resources, Forest, water and mineral resources. Conservation of Energy. National park and Wild Life Sencturies etc. 3 Adoptation Mechanism. Adoptation in different Environment 4 Stress Physiology Concept. Stress Physiology in Different Condition.

M.Sc. 2nd Semester Zoology	Paper III	ZOO203	Immunology	**Immunology part provides the students with the fundamental knowledge of the immune system and its protective roles against diseases.The course not only describes how embryos develop (embryology), but also highlights how the processes of development are brought about by changing individual cells into specialized cells with specific functions (the cellular level), and how genes within the genome of the organism drive and guide these changes (the molecular level).** 1 Immune system at the level of Cells and Organs. Nature of Antigens , Antigenicity and Immunogenicity 2. Nature of Antigens , Antigenicity and Immunogenicity Immunoglobulin Structure & Function and detail study of IgG, IgM, IgE, IgD 3 Immunoglobin class. Antigen & Antigen - Antibody Interaction and knowladge about B - Cell & T-Cell Compliment System, Major and Minor Histocompatibility, Coplex Inheritance of HLA system 4 Immune system in Health disease. Pathophysiology of parasitic infection. and AIDS
M.Sc. 2nd Semester Zoology	Paper IV	ZOO204	Biostatistics and Computer Application	**This paper gives descriptive explanation of biology to a unique style of learning through graphic designs and quantitative parameters to realize how such research and innovations have made science interdisciplinary and applied. The paper elucidate the following topics:** 1. Introduction to Digital Computer, Hardware and Software, Input and Output devices. 2. Computer application of Word, Excel and Power Point. Computer application in Biostatistics. 3. Biological data. Representation of data. Central Tendency- Mean , Medium and Mode. 4. Chi - square test. Student t - test. Analysis of Variation, Correlation & Probability

M.Sc. 3rd Semester Zoology	Paper I	ZOO301	Comparative Anatomy of Vertebrate	**The course offers insight into the physiology of chordates while giving an account of their anatomy. This course also explores vertebrate morphology with the aims of understanding major events in the history of vertebrate evolution and integrating the morphology of vertebrates with their ecology, behaviour and physiological adaptation in diverse habitats. Thermal relations encountered in endo- and ectothermic animals will be explained. Selective pressures that shape to different physiological phenotypes will also be addressed in the course. The paper elucidate following topics:** 1. Classification of Amphibia, Reptile, Bird and Mammals 2. Study of Integuement and Skeletal System 3. Anatomy of Respiratory and Circulatory System. Study of Heart. 4. Central, Peripheral & Autonomic Nervous System. Sence organ and Sensory Receptors. Study of Urinogenital System
M.Sc. 3rd Semester Zoology	Paper II	ZOO302	Animal Behaviour	**The course provides a wide range of theoretical and practical techniques used to study animal behaviour It also Develop skills, concepts and experience to understand all aspects of animal behaviour. It Objectively understand and evaluate information about animal behaviour and ecology encountered in our daily lives. The course also halps to Understand and be able to objectively evaluate the role of behaviour in the protection and conservation of animals in the wild. It Consider and evaluate behaviour of all animals, including humans, in the complex ecological world, including the urban environment. The paper explains the following topics:** 1. Ethology, Pattern of Behaviour, Innete and Sterioscopic Behaviour. Biological Rhythms. 2. Communication, Lerning and Memory, Reasoning and Reproduction Behaviour 3. Birds & Fish Migration and Echolocation in Bats. Neural and Hormonal control of Behaviour 4. Social Behaviour. Hormonal effect on Behavioural Pattern

M.Sc. 3rd Semester Zoology	Paper III	ZOO303	Tools & techniques in biology	**This paper builds capacity of the student to understand the use of various tools and techniques used in Research purposes in biology and covers following topics:** 1. Ultra Centifuge, Electrophorasis, Chromatography, colorimetery, Spectophotometer & Flow Cytometery 2. Microscopy Light & Electrone 3. Chemical and Biological Assays in vivo & in vitro.Principal of Cytological & Cytochemical Technique. 4. Nucleic Acid Hybridization & Freeze Technique
M.Sc. 3rd Semester Zoology	Paper IV	ZOO304	Molecular Cytogenetics	**The course provides an insight into the life processes at the Chromosome & Gene levels. Its Get an in-depth understanding on the principles and mechanisms of inheritance. Understand the fine structure and molecular aspects of genetic material & Learn the importance of inheritance in Man.The paper describes following topics in detail:** 1. Eukaryote Chromosome, Giant Chromosome, Sex Chromosome, Linkage, crossing over & mulitiple alleles 2. Cell fusion, Numerical and structural abnormalities of human chromosome syndromeChromosome based heritable disease in human, Life cycle o some organism important in genetic studies 3. Microbial Genetics. Baceriophages. Molecular cytogenetics technique : FISH, GISH., DNA finger printing. Flow cytometery. Gene Regulation. 4. DNA structure, type and its replication and fusion. RNA structure types and function. Genetic Code. Protein synthesis in prokaryote and eukaryote. Transcribtion & Translation.
M.Sc. 4th Semester Zoology	Paper I	ZOO401	Neuro Physiology & Human Physiology	**The course enhance the Anatomy of Central and Peripheral Nervous System , Conduction Mechanism of Neuron, Role of Synapsis & Neurotrasmitters. Its also covers all Physiological system and how they maintain Living System inside the Cell. To understand about the importance and scope of Neuro Physiology & Human Physiology the paper describes following topics:** 1. Anatomy of Brain, Spinal Cord, Structure and function of Neurone, Neurogalia, Conduction mechnism and Nerve ending. 2. Physiology of Synapse, Neurotrasmitters, Autonomic Nervous System, Reflex Action & Sensations. 3. Physiology of Digestion, Circulation & Respiration 4. Physiology of Contractile element, Excretion and Thermal regulation.

M.Sc. 4th Semester Zoology	Paper II	ZOO402	Biochemistry, Metabolic Regulation & Cell Function	**The course provides an introduction to the structure of biomolecules with emphasis on the techniques used for structure determination and analysis. The course covers basic aspects of sample preparation for analysis and aims to enlighten the students how structural information can be utilized for better understanding of biological processes. To understand about the importance and scope of biochemistry the paper describes following topics:** 1. Chemistry,Function & Regulation of Water. Classification, Structure, Properties, Function and Metabolism of Carbohydrate & Lipid 2. Classification, Structure, Properties, Function and Metabolism of Protein & Metabolism of Minerals. Carbohydrate and Utilisation of Kreb Cycle 3. Anabolism, Catabolism, Biological Importance & Chemistry of Nuclic Acid. Synthesis and Function of Eicosanoid. Water & Fat Soluble Vitamin. 4. Classification, Regulation and Mechanism of Enzyme Action and study of Co-enzyme.Biological Oxidation & Utilization of Krebs Cycle.
M.Sc. 4th Semester Zoology	Paper III	ZOO403 A	Ichtheology Group - A	**The course improves the knowledge of anatomy, physiology, biochemistry and Classification of Fishes. This paper build knowladge of student in the following feilds:** 1. Skin, Skeleton, and Fins of Fishes. Locomotion and Feeding habbits 2. Respiration & Accessory Respiratory organs of Fishes and information about Swim bladder and Weberian Ossicle. Heart and blood vascular system with the infomation about Excretion & Osmoregulation. 3. Nervous System and Sense organ in fishes with Sound producing organ and Electric organ. Reproduction &. Development of Fishes. 4. Adoptation in fishes - Coloration, Deep sea, and Hillstream fishes. This unit gave information about Larvivorous & Exotic fishes. Fish Byproduct and Aquarium maintenence
M.Sc. 4th Semester Zoology	Paper IV	ZOO404 A	Aquaculture & Fishries Group - A	**This course will give the students an understanding of the principles of aquaculture, including production systems, water quality, nutrition, spawning, larval culture and culture methodologies with special reference to fish, and prawn. The course will include an opportunity to conduct hands-on activities related to culture and husbandry of animals. The paper describes under following field:** 1. General charactors, Classification, Evolution & Phylogeny of Placoderm, Elasmobranchs, Holocephali, Dipnoi & Teleost Fishes 2. Fish culture in Fresh Water, Maintanance of Fish Farm and Transport of Fish Seeds & Brooders 3. Composit Fish Culture. Sewage Fed Fish Culture, Prawn-Fish and Rice feild Fish Culture and Marine Fishries 4. Fish diseases- Viral, Bacterial and Helminth & Its treatments. Parasite of Fishes

M.Sc. 4th Semester Zoology	Paper IV	ZOO403 B	Cell Biology (GROUP – B)	**The course provides an insight into the life processes at the Celluiar levels. Its Get an in-depth understanding on the principles and mechanisms of Cell Organel. Understand the fine structure of Cell & Learn the importance ofCell Biology.The paper describes following topics in detail:** 1. Molecular organization of eukaryotic chromosomes, Specialized chromosomes, DNA methylation and DNA Aase-1 Hypersensitivity, Specialized chromosomes II, Organisation and significance of heterochromatin, Organisation and significance of heterochromatin. 2. Structural organization of Eukaryotic genes, Gene families, Transposable genetic elements of prokaryotes and eukaryotes, Organisation of eukaryotic transcriptional machinery promoter, DNA binding domains of transcription apparatus 3. Eukaryotic transcription, Environmental modulation of gene activity (stress response) stress genes, Molecular basis of thalasemias muscular dystrophy cystic fibrosis, DNA rearrangement, Chlorine gene, 58 RNA genes 4. Drosophila development, Drosophila development II origin of dordal ventral polarity, Basic idea of homoetic selector genes and homeotic mutation,Basic idea of organization of homeoboxes, Evolutionary significance of homeoboxes.
M.Sc. 4th Semester Zoology	Paper IV	ZOO404 B	Cellular Organization and Molecular Organization. (GROUP – B)	**The course is designed for the students to make them aware of the Cellular Organization and Molecular Organization, but also highlights how the processes of development are brought about by changing individual cells into specialized cells with specific functions (the cellular level), and how genes within the genome of the organism drive and guide these changes (the molecular level)..The following topics gets covered under this paper:** 1. General organization and characterizes of viruses (Examples SV 40 and HIV). Yeast : Structure, reproduction and chromosome organization: Molecular organization of reoiratory chain assemblies, ATP / ADP Translocase and F0F1 AT pase, Cell cycle: 2. Peroxisomes, Nucleolus: Structure and Biogenesis and functions of lysosomes, Synthesis and targeting of mitochondrial proteins, Secretary pathways and translocation of secretary proteins across the EPR membrane 3. Genome complexity: C- value. DNA sequences of different complexity. Cytoskeleton changes. Biochemical changes: Cell surface changes. and • Genetic basis of human 4. Chromosomal abnormalities in human cancer. General idea of onchogens and proto onchogens. Transforming Agents. Tumor Supressor geanes. Receptor – Ligand interaction and signal

M.Sc. 4th Semester Zoology	Paper IV	ZOO403 C	Biology of vertebrate immune system (GROUP – E)	**Immunology part provides the students with the fundamental knowledge of the immune system and its protective roles against diseases.The paperThis paper cover Tissues Immune system, Antigen T-Cell, B-Cell and Immunological Techniques and describes following topics in detail** 1. Tissues of Immune system- Primary and Secondary lymphoid organs, Antigen processing. Antigen presentation 2. T-Cell lineage and receptors. T-cell activation. B-cell lineage and receptors. B-cell activation. Immunoglobulin structure, Biological and physical properties of immunoglobulin. Gene model for Immunoglobulin gene structure. 3. Generation of antibody diversity. Immunization.Immediate type of hypersensitivity reaction of Anaphylectic type-1. Antibody dependent cytotoxic type II reaction.Complex mediated type III reaction 4. Delayed type cell mediated hypersensitivity type IV reaction. Enzyme linked immunosorbent assay (ELISA) technique and its applications. Immunofluorescence technique. Immunodiffusion techniques. Monoclonal antibody technology
M.Sc. 4th Semester Zoology	Paper IV	ZOO404 C	Molecular Endocrinology and Reproductive Technology (GROUP – E)	**The course provides an insight into the structure and function of Endocrine systems in humans and their involvement in body metabolism towards maintenance of homeostasis. This paper olso cover Reproductive Technology. It provides in-depth knowledge on following topics:** 1. Chemical nature of Hormones- Protein & polypeptides. Amino acid derivative. SteroidsPhospholipids derivative.Purification and characterization of Hormones and Tissue hormones 2. Receptors: Membrane Receptor. Nuclear Receptor. Orphan Receptor. G-Protein and Nuclear Receptor 3. Hormone – Transduction. G-Protein & Cyclic Nucleosides. Calcium calmoduline & phospholipids. Phosphorylation & other non transcriptional effect of Hormones. Genetic control of formation of Hormone. Transcription, Translation and Post translation. Secretion of Hormone. 4. Multiple ovulation and embryo transfer Technology. Study of estrous cycle. Surgical technique-Castration, Ovariectomy, Vasectomy, Tubectomy, Laprotomy.

Part II : Programme Outcome (Session 2022 - 23)

Name of programme/ degree	Name of subject	Programme Outcome
B.Sc. Programme outcome	Zoology	1. A Bachelor of Science degree (or B.Sc. for short) is a degree awarded at universities around the world for completion of an undergraduate-level study in a science- or technology-related field. 2. It engages the student at their teenage and mould their brain upto a maturity level by the time program gets completed. 3. Enrolling in an BSc degree program translates to making a significant investment in one's professional career and also helps the student to get prepared for the professional examinations like IAS, IFS, PSC, Bank Services etc. 4. In addition to the enhanced career prospects that can be gained by taking a Bachelor of Science, students also develop valuable personal skills and it helps in building their confidence level to face different challenges in life. 5. It also fulfill a crucial prerequisite to Master studies. 6. B.Sc level programme is designed in such a manner that a student can post comlletion can align to any related course of M.Sc. The syllabus of B.Sc. Zoology connect various key academic field of Elite course of M.Sc. Zoology like Master's in Ethioligy, Cytology , Entomology, Environmental Science, Bio technology, Microbiology, Nimnology, Endocrinology, Physiology, Wildlife Conservtion,Animal Behavior etc.
M.Sc. Programme outcome	Zoology	1. A Master of Science degree provides scientific as well as professional entry-level competency to students. 2. This program offers advanced theoretical as well as practical knowledge to students in their chosen specialisation. 3. The MSc specialisation opted by students is usually the one studied by them during graduation and ehance their knowledge in selected subject. 4. This program is a prerequisite to enter into careers like lecturer in schools, Asst. Professor in colleges, and also open portal to appear in examinations like NET, SET, GATE etc. 5. It is also a mandatory program for further specialization like M.Phil. , Ph.D. and D.Sc. 6. The course is designed to provide the in-depth knowledge of the Specialized Subject. 7. It further enhances the vocabulary, skill sets, reasoning and IQ level.
Ph.D. Programme outcome	Zoology	This course is thus necessary for enhanced intelligence in the selected field of Zoology.

Part III : Programme Specific Outcome (Session 2022 - 23)

Name of programme/ degree		Programme Specific Outcome
B.Sc. Programme Spesific outcome	Zoology	1. Understand the nature and basic concepts of cell biology, genetics, taxonomy, physiology, ecology and applied Zoology 2. Analyse the relationships among animals, plants and microbes 3. Perform procedures as per laboratory standards in the areas of Taxonomy, Physiology, Ecology, Cell biology, Genetics, Applied Zoology, Clinical science, tools and techniques of Zoology, Endocrinology, Gamete Biology, Toxicology, Entomology,Nematology Sericulture, Biochemistry, Fish biology, Animal biotechnology, Immunology and research methodology 4. Understand the applications of biological sciences in Apiculture, Aquaculture, Agriculture and Medicine. 5. Gains knowledge about research methodologies, effective communication and skills of problem solving methods 6. Contributes the knowledge for Nation building.
M.Sc. Programme Spesific outcome	Zoology	1. Understand the biological diversity and grades of complexity of various animal forms through their systematic classification and comparative structural studies 2. Learn how earth was formed and how life started and evolved on the planet through process of organic evolution. 3. Understand the roles of plants, animals and microbes in the sustainability of the environment and their interaction among themselves and deterioration of the environment due to anthropogenic activities. 4. Understand the concepts and principles of biochemistry, immunology, physiology, ethology, endocrinology, developmental biology, cell biology, genetics, molecular biology and microbiology. 5. Develop technical skills in biotechnology, bioinformatics and biostatistics. 6. Delve into the wonderful world of insects, their success on the planet and their diversity . 7. Aquire knowledge on harmful and beneficial insects, their adaptations for life and control measures. 8. Perform laboratory procedures as per standard protocols in the areas of animal diversity, systematics, cell biology, genetics, biochemistry, molecular biology, microbiology, physiology, immunology, developmental biology,environmental biology, ethology, endocrinology, gamete biology, evolution and Entomology

Name of department: हिन्दी

Part I: Course outcome

Name of Programme	Course/ Paper	Name of course/ Paper	Course outcome (should include one point for each unit of the paper)
B.A./B.Sc./B.Com./B.Sc. H.Sc.sem I	Paper I	आधार पाठ्यक्रम हिन्दी भाषा	I-कार्यालयीन प्रयोग हेतु हिन्दी भाषा का ज्ञान व मूल्य शिक्षा हेतु नमक का दरोगा कहानी, भोलाराम का जीव व्यंग्य का अध्ययन ,महात्मा गाँधी के चोरी और प्रायश्चित से छात्रों को मूल्य शिक्षा		
			II. प्रतियोगी परीक्षा हेतु शुद्ध भाषा का ज्ञान व वाक्य शुद्धि तथा शब्द शुद्धि		
			iii- नवाचार हेतु कम्प्युटर का परिचय व भाषा से उसका संबंध ,व कथन की शैलियों का अध्यापन	
			iv. प्रतियोगी परीक्षा हेतु व्याकरण का ज्ञान ,संज्ञा , सर्वनाम,संधि समास आदि	
B.A./B.Sc./B.Com./B.Sc. H.Sc. IInd year	Paper I	आधार पाठ्यक्रम हिन्दी भाषा	I - महात्मा गाँधी के चोरी और प्रायश्चित से छात्रों को मूल्य शिक्षा व प्रयोजन मूलक भाषा	
			II - युवाओं का समाज में स्थान व व्यापारिक व तकनीकी कार्यों हेतु भाषा का प्रयोग	
			III -मातृभूमि निबंध से देशभक्ति का भाव जागृत करना व व्याकरण का ज्ञान	
			IV -डॉ खूबचन्द बघेल का परिचय और व्याकरण का ज्ञान	
			V -संभाषण कुशलता और अनुवाद	
B.A./B.Sc./B.Com./B.Sc. H.Sc. III	Paper I	आधार पाठ्यक्रम हिन्दी भाषा	I- कविता , नाटक और सामान्य ज्ञान व कथन की शैली का प्रयोग	
			II -विकासशील देशों की समस्या और पुनर्विचार ,एवं विभिन्न संरचनाओं का अध्ययन	

			III- आधुनिक तकनीकी सभ्यता एवं पर्यावरण का अध्ययन व कार्यालयीन पत्रों के उदाहरण |
			IV -जनसंख्या के कुचक्र का अध्ययन व अनुवाद प्रशिक्षण |
			V - ऊर्जा और शक्तिमानता का अर्थशास्त्रीय अध्ययन , प्रतिवेदन व निमंत्रण पत्र लेखन |
B.A.I sem	**Paper I**	**प्राचीन हिन्दी काव्य**	I-कबीर की साखियों की व्याख्या व समीक्षा से मूल्य संवर्धन |
			II- जायसी के नागमती वियोग वर्णन से वियोग शृंगार का अध्ययन |
			III-सूर के भ्रमरगीत सार के माध्यम से ज्ञान पर प्रेम की विजय का अध्ययन |
			IV- तुलसी के रामचरित मानस के सुंदरकांड के माध्यम से सदकर्म की प्रेरणा |
			V-घनानन्द के कवित्त व अन्य कवियों द्वारा नैतिक शिक्षा |
B.A. II SEM	**Paper II**	**हिन्दी कथा साहित्य**	I- गोदान उपन्यास की समीक्षा और प्रेमचंद का जीवन परिचय |
			II- आकाशदीप और कफन कहानी की समीक्षा व व्याख्या |
			III-परदा और ठेस कहानी की व्याख्या व तत्वों के आधार पर समीक्षा |
			IV- मलबे का मालिक और चीफ की दावत कहानी के आधार पर मूल्य शिक्षा |
			V- जली हुई रस्सी और गदल कहानी की व्याख्या व समीक्षा तथा अन्य कहानीकारों का परिचय |
B.A.II	**Paper I**	**अर्वाचीन हिन्दी काव्य**	I-भारत भारती की कविताएं व उनकी व्याख्या तथा समीक्षा |
			II-सूर्यकांत त्रिपाठी निराला की कविताएं व उनकी व्याख्या तथा समीक्षा |
			III- सुमित्रा नन्दन पंत की कविताएं व उनकी व्याख्या तथा समीक्षा|
			IV- माखन लाल चतुर्वेदी की कविताएं व उनकी व्याख्या तथा समीक्षा |
			V-अज्ञेय की कविताएं व उनकी व्याख्या तथा समीक्षा | अन्य कवियों का जीवन परिचय |

	Paper II	**हिन्दी निबंध तथा अन्य गद्य विधाएँ**	I- अंधेर नगरी नाटक की समीक्षा और भारतेन्दु हरिश्चंद्र का जीवन परिचय |
			II- क्रोध ,बसंत और उस अमराई ने राम राम कही है निबंध की समीक्षा व व्याख्या |
			III-काव्येषू -, बेईमानी की परत व्यंग्य निबंध की व्याख्या व तत्वों के आधार पर समीक्षा |
			IV- औरंगजेब की आखरी रात , स्ट्राइक और एक दिन की एकाँकी के तत्वों के आधार पर समीक्षा |
			V-दस हज़ार और मम्मी - ठकुराइन एकाँकी की व्याख्या व समीक्षा तथा अन्य लेखकों का परिचय |
B.A. III	**Paper I**	**जनपदीय भाषा साहित्य (छत्तिसगढ़ी)**	I-संत धर्मदास के छत्तीगढ़ी काव्य की व्याख्या व समीक्षा से मूल्य संवर्धन |
			II-सोनपान छत्तीगढ़ी निबंध की समीक्षा |
			III-हाना का उदाहरण सहित अध्ययन |
			IV- डॉ विनय कुमार पाठक की छत्तीगढ़ी कविताओं की व्याख्या व समीक्षा |
			V-मुकुन्द कौशल की छत्तीगढ़ी ग़ज़ल की व्याख्या व अन्य रचनाकारों का परिचय |
	Paper II	**हिन्दी भाषा साहित्य का इतिहास तथा काव्याङ्ग विवेचन**	I- हिन्दी भाषा के स्वरूप का विवरण |
			II- हिन्दी के शब्द भंडार से अवगत कराना |
			III-हिन्दी साहित्य के इतिहास का परिचय |
			IV- काव्याङ्ग में रस के प्रकार व अंगों का परिचय |
			V- काव्याङ्ग में छंद व अलंकारों के प्रकार व अंगों का परिचय|

M.A. I sem	**Paper I**	**हिन्दी साहित्य का इतिहास**	I- हिन्दी साहित्य का इतिहास दर्शन और साहित्येतिहास की समीक्षा |
			II- आदिकाल के कवियों की समीक्षा |
			III- भक्ति काल का अध्ययन |
			IV- सूफी और प्रेमाख्यानक कवियों का अध्ययन |
	Paper II	**प्राचीन एवं मध्यकालीन काव्य**	I- चंदबरदाई के पृथ्वीराज रासो का अध्ययन |
			II- कबीर की साखियों की व्याख्या व समीक्षा |
			III- जायसी के नागमती विरह खंड की समीक्षा |
			IV-अन्य भक्तिकालीन कवियों का परिचय |
	Paper III	**आधुनिक हिन्दी काव्य**	I- मैथिलीशरण गुप्त के साकेत का अध्ययन |
			II- जयशंकर प्रसाद के महाकाव्य कामायनी का अध्ययन |
			III- सूर्यकांत त्रिपाठी निराला की कविताओं की समीक्षा व व्याख्या |
			IV-अन्य आधुनिक कवियों की समीक्षा |
	Paper IV	**आधुनिक गद्य साहित्य**	I- स्कंदगुप्त नाटक की समीक्षा |
			II-आषाढ़ का एक दिन की नाट्य समीक्षा |
			III- विभिन्न निबंधों की समीक्षा |
			IV-विभिन्न विधाओं के अन्य रचनाकारों की समीक्षा |
M.A. II sem	**Paper I**	**हिन्दी साहित्य का इतिहास भाग 2**	I- रीतिकाल एवं उसकी अन्य धाराओं का अध्ययन |
			II- आधुनिक काल का परिचय |
			III-द्विवेदी युग व अन्य वादों व प्रवृत्तियों का अध्ययन |
			IV- हिन्दी गद्य का विकास |
	Paper II	**प्राचीन एवं मध्यकालीन काव्य भाग 2**	I - सूरदास के भ्रमरगीत सार की काव्य समीक्षा |
			II.तुलसी के रामचरित मानस के सुंदरकांड के माध्यम से सदकर्म की प्रेरणा |

			III- बिहारी के काव्य की व्याख्या व समीक्षा |
			IV-विभिन्न कवियों की समीक्षा |
	Paper III	**आधुनिक हिन्दी काव्य भाग 2**	I-अज्ञेय की कविताओं की व्याख्या व समीक्षा |
			II- मुक्तिबोध की लंबी कविता अंधेरे में की व्याख्या |
			III- नागार्जुन की विभिन्न कविताओं की समीक्षा |
			IV- द्रुत पाठ के विभिन्न कवियों की समीक्षा |
	Paper IV	**आधुनिक गद्य साहित्य भाग 2**	I - गोदान उपन्यास की समीक्षा |
			II- आंचलिक उपन्यास मैला आँचल की समीक्षा |
			III- विभिन्न कहानियों की व्याख्या व समीक्षा |
			IV - विभिन्न कहानीकारों की रचनाओं का अध्ययन |
M.A. III SEMESTER	**Paper I**	**काव्य शास्त्र एवं साहित्यालोचन भाग 1**	I. भारतीय काव्यशास्त्र में काव्य हेतु ,लक्षण व प्रयोजन का अध्ययन |
			II. अलंकार , रीति , वक्रोक्ति , ध्वनि और औचित्य सिद्धान्त की समीक्षा |
			III. पाश्चात्य काव्य शास्त्री प्लेटो और अरस्तू के सिद्धांतों का अध्ययन |
			IV. लोंजाइनस और मैथ्यू अर्नोल्ड की काव्य अवधारणा का अध्ययन |
	Paper II	**भाषा विज्ञान व हिन्दी भाषा भाग 1**	I. भाषा व भाषा विज्ञान का आधारभूत ज्ञान |
			II. स्वन प्रक्रिया का अध्ययन |
			III. रूप विज्ञान व वाक्य संरचना का अध्ययन |
			IV.अर्थ विज्ञान का अध्ययन |
	Paper III	**प्रयोजनमूलक हिन्दी भाग 1**	I. हिन्दी के विभिन्न रूप व कार्यालयीन हिन्दी ,राजभाषा का अध्ययन |
			II. पारिभाषिक शब्दावली एवं कम्प्युटर में हिन्दी का अनुप्रयोग |
			III. इंटरनेट संपर्क उपकरणों का परिचय |
			IV. पत्रकारिता स्वरूप एवं प्रकार |
	Paper IV	**भारतीय साहित्य**	I. भारतीय साहित्य का स्वरूप |

			II. पूर्वाञ्चल भाषा वर्ग में बंगला भाषा व साहित्य का अध्ययन |
			III. बंगला और हिन्दी का तुलनात्मक अध्ययन |
			IV. अग्निगर्भ उपन्यास व हयवदन नाटक काबी आलोचनात्मक अध्ययन |
M.A. IV SEMESTER	**Paper I**	**काव्य शास्त्र एवं साहित्यालोचन भाग 2**	I. अभिव्यंजनावाद , स्वच्छंदतावाद आदि का अध्ययन |
			II. विभिन्न आचार्यों का काव्यशात्रीय सीएचआईएनटीएएन |
			III. आधुनिक हिन्दी आलोचना की प्रमुख प्रवृत्तियाँ |
			IV. व्यावहारिक समीक्षा |
	Paper II	**भाषा विज्ञान व हिन्दी भाषा भाग 2**	I. प्राचीन भारतीय आर्य भाषाओं का अध्ययन |
			II. हिन्दी की उप भाषाओं का अध्ययन |
			III. हिन्दी के विविध रूपों का अध्ययन |
			IVदेवनागरी लिपि का अध्ययन |
	Paper III	**प्रयोजनमूलक हिन्दी भाग 2**	I. मीडिया लेखन जैसे जनसंचार के माध्यमों का अध्ययन |
			II.दृश्य - श्रव्य माध्यम (फिल्म ,टेलीविजन व रेडियो)में भाषा की प्रकृति |
			III. अनुवाद परिभाषा , क्षेत्र व सीमाएं |
			IV. शाब्दिक अनुवाद , भावानुवाद आदि का अध्ययन |
	Paper IV	**जनपदीय भाषा साहित्य (छत्तीसगढ़ी)**	I. छत्तीसगढ़ का साहित्यिक और सांस्कृतिक इतिहास |
			II. छत्तीसगढ़ के प्रमुख कवियों का परिचय |
			III.छत्तीसगढी नाटक और उपन्यास का अध्ययन |
			IV. छत्तीसगढ़ के अन्य रचनाकारों का अध्ययन |

GOVT. D.B. GIRLS' P.G. (AUTONOMOUS)
COLLEGE
RAIPUR, CHHATTISGARH

DEPARTMENT OF ENGLISH

PROGRAM OUTCOME

PROGRAM SPECIFIC OUTCOME

COURSE OUTCOME

UG/PG- LANGUAGE/LITERATURE

2022-23

Department of English 2022-23

Name of Programme	Name of Subject	Programme Outcome
UG II and III sem	English Language	PO 1: To develop the understanding of the nature of language. PO 2: To develop logical thinking and scientific temper. PO 3: To enable a sense of understanding in the students of the world around them. PO 4: To widen the students' perception. **Program specific outcome-** PSO 1: Develop the knowledge of grammatical system of English Language. PSO 2 : Develop four language skills LSRW. PSO 3 : Write analytically in different formats like, essays, reviews, precise, paragraph. PSO 4: Scope of employability and entrepreneurship in the field of Media and Journalism, Teaching, Public Relation, Human Resource, Civil Service, Creative Writing etc. PSO 5: To communicate effectively in groups and organizations. **Course learning outcome-** CO 1: The aim of the course is to help students become familiar with grammar. CO 2: It will also help them aware of dependence of language on grammar. CO 3: It will help students to develop their reading, writing and communicative skills and all aspects of effective communication. CO 4: Recognise their own ability to improve their own competence in using the language. CO 5: Different strategies of comprehension CO 6: Read and understand the texts of various genres genres CO 7: Identify and overcome barriers of communication CO 8: Analysing a topic for an essay or a report.
B.A. I sem	English Litreature	PO 1: The aim of the course is to help students become familiar with grammar. PO 2: It will also help them aware of dependence of language on grammar. PO 3: It will help students to develop their reading, writing and communicative skills and all aspects of effective communication. **Program specific outcome-** PSO 1 : Comprehend various forms of literature like, prose, poetry, drama and fiction. PSO 2 : Apprehend different cultures and cultural sensibilities around the world. PSO 3: Perspectives of literary movements that existed in different ages. PSO 4: Define literary theory and terms in criticism. **Course learning outcome-** CO 1: To develop an understanding of Elizabethan literature. CO 2: To become familiar with the structure of play. CO 3: To increase familiarity with Shakespearean language. CO 4: To develop an understanding of the relevance of studying classic text. CO 5: To appreciate the beauty of language & the thought in the poem. CO 6: To develop aesthetic sense among the learners. CO 7: Helps to understand and appreciate world around us.
B.A. II Sem	English Literature	PO 1: The aim of the course is to help students become familiar with grammar. PO 2: It will also help them aware of dependence of language on grammar. PO 3: It will help students to develop their reading, writing and communicative skills and all aspects of effective communication .

B.A. III Sem	English Literature	**Course learning outcome-** CO 1: To develop an understanding of the relevance of studying modern text. CO 2: To develop aesthetic sense among the learners. CO 3: To appreciate the beauty of language of poem.
B.A. IV Sem	English Literature	**Course learning outcome-** CO 1: The student will be able to understand and appreciate modern English Literature. CO 2: The student will be able to enhance the understanding of major poetic devices CO 3: The students will get exposed to the complexities of modern life with the help of the major novels and dramas.
M.A. I Sem	English Literature	PO 1:To interpret the texts, literary texts and their socio-political , historical contexts. PO 2:To read literature with interpretative and analytical proficiency PO 3:To make students acquainted with the growth and development of literary forms PO 4:To develop the understanding of various critical theories PO 5:To read literature with interpretative and analytical proficiency PO 6:To develop critical thinking and analytical temper PO 7:To provide an understanding of the new literatures. **Program specific outcome-** PSO 1: Explore in greater depth literary history, works, genres and periods of literature in English and understand their literary value and socio- cultural relevance in the literary cannon. PSO 2: Develop their critical thinking further by sharpening improve their interpretive abilities using different critical approaches. PSO 3: Undertake minor research for the courses they are studying in the form of project for internal assessment. PSO 4: Develop linguistic ,literary , critical and communicative competence needed to work in the field of education, research and other related Field. PSO 5: Major movements of world cinema through literature and film advance their ability to enunciate the relations among culture and film.
	Paper I (Poetry I)	**COURSE LEARNING OUTCOMES**- CO 1: The student will be able to understand and appreciate poetry as a literary art form. CO 2: The student will be able to recognize poetry from a variety of cultures, languages and historic periods. CO 3: The student will be able to analyze various elements of poetry such as genre, form, figures of speech, symbolism, etc.
	Paper II (Drama-I)	**COURSE LEARNING OUTCOMES**- CO 1: To explore texts, understanding their social, cultural and historical context CO 2: There will be improvement in the verbal and non-verbal expression of ideas. CO 3: The student will be able to understand the world around them
	Paper III (Prose I)	**COURSE LEARNING OUTCOMES**- CO 1: Student will be able to comprehend the thought and express the ideas contained in various forms of prose pieces. CO 2: The vocabulary of the student will be enriched. CO 3: The student will be acquainted with the different styles of prose writing
	Paper IV (Fiction I)	**COURSE LEARNING OUTCOMES**- CO 1: The students will an in-depth knowledge of the growth and development of English novel and various kinds of fiction. CO 2: They will be able to analysis representative authors and their distinguished style of narration. CO 3: They will develop an understanding of different kinds of narrative techniques

M.A. II Sem	Paper I (Poetry II)	**COURSE LEARNING OUTCOMES-** CO 1: The students will develop a deeper appreciation of cultural diversity through the poetry of different periods. CO 2: The students will develop their critical thinking skills on the basis of the study of various poets of Romantic, Victorian and modern age. CO 3: The students will develop their own creativity.
	Paper II (Drama-II)	**COURSE LEARNING OUTCOMES-** CO 1: The students will be able to describe, analyze, interpret and evaluate dramatic literature CO 2: The students will be able to reflect on and evaluate their own work and that of others CO 3: The students will be able to learn more about a type of specific theatre
	Paper III (Prose II)	**COURSE LEARNING OUTCOMES-** CO 1: The students will have a complete understanding of various types of essay. CO 2: Students will be able to analyse the ideas expressed by the major essayists and their prose styles CO 3: An increased sense of contextual understanding would refine the students Outlook as to the literary work. CO4: Student would be able to write with brevity and detail
	Paper IV (Fiction II)	**COURSE LEARNING OUTCOMES-** CO 1: The students shall be trained in analysis of fiction using requisite religious socio cultural and historical context. CO 2: The student would be trained in appreciation of the background of the literary work and would be taught of its effect on the author's method of expression. CO 3: Recruitment of contextual study wood help broaden students outlook as to the work in discussion. CO 4: Students should be able to answer questions with practice and expertise
M.A. III Sem	Paper I Critical Theory I	**COURSE LEARNING OUTCOMES-** CO 1: To enable the students to use the various critical approaches. CO 2: To introduce learners to Critical Theory – a field of inquiry involving continental philosophy and European linguistics, anthropology, sociology, literature and so forth. CO 3: To understand the fundamental concepts of criticism. CO 4: To develop students' understanding about the principles of Indian as well as Western European philosophy and aesthetic theory.
	Paper II Indian Writing in English	**COURSE LEARNING OUTCOMES-** CO 1: To familiarize the learners with various themes and cultural contexts of Indian English writing. CO 2: To help students understand the history and the evolution of Indian Literature. CO 3: To introduce them to all the 4 genres of Indian Literature. CO 4: To enable them understand the cultural heritage of India through its literature
	Paper III Linguistic s	**COURSE LEARNING OUTCOMES-** CO 1: The students will be able to understand the basics of English language and linguistics. CO 2: Develop proficiency to identify the grammatical and phonemic components CO 3: An enhanced knowledge of semantics
	Paper IV Elective I Research Methodol ogy	**COURSE LEARNING OUTCOMES-** CO : The students will understand the meaning and nature of research, various tools, methods and techniques of research. Students will develop analytical thinking and critical temper.

	Paper IV Elective II English Language Teaching	**COURSE LEARNING OUTCOMES-** CO : The students will be able to understand the varieties of language teaching ,its theories, teaching plan and various methods of ELT
M.A. IV Sem	Paper I Critical Theory II	**COURSE LEARNING OUTCOMES-** CO 1: To introduce the students with the major trends of literary thought. CO2: To familiarise them with the inter-disciplinary nature of literary theories CO 3: To familiarise them with discourses related to contemporary socio-politics issues.
	Paper II American Literature	**COURSE LEARNING OUTCOMES-** CO 1: To expose students to the wide variety of American literature ,its history and background CO 2:. To study the eminent American authors and their contribution to the making of world literature CO 3: Upon completion of the course, students should be able to analyze and discuss works of American literature from a range of genres. CO 4: Students will study works of prose, poetry, drama and fiction in relation to their historical and cultural contexts.
	Paper III Elective I African and Caribbean Literature	**COURSE LEARNING OUTCOMES-** CO : The students will develop an understanding of the major issues represented in African and Carribean literature and its major texts
	Paper III Elective II Canadian and Australian Literature	**COURSE LEARNING OUTCOMES-** CO : The students will have an understanding of major Canadian and Australian writers, texts and issues represented in their writings
	Paper IV Dissertation / Project	**Course Learning Outcomes** CO : The Course is expected to explore the research aptitude of the learners and give them the much needed background information and experience for taking up research programmes or professional assignments.
Ph.D	English	To develop critical thinking, complex problem solving and decision making.

GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE RAIPUR

DEPARTMENTOF ECONOMICS

OUTCOMES OF U.G. AND P.G. COURSES

2022-23

Name of Program	Course/Paper	Name of course/Paper	Course outcome (should include one point for each unit of the paper)
B.A. I SEMESTER	**NEP**	Microeconomics	This course is designed to provide a basic understanding of microeconomic concepts, the behavior of economic agent-consumer, producer and factor owner –price fluctuations in the market. The course includes the concepts of consumers' behavior, production, market, factor pricing and welfare Economics. On completion of the course, students will know about-
		CO1	Introduction and methodology of economics
		CO2	Production and cost matrix in output determination.
		CO3	Various market structure and determination of prices in these markets.
		CO4	How production factors prices are determined.
B.A. II SEMESTER	**NEP**	Indian economy	It makes learners understand the economic functioning and conditions of our country in the context of past, present and future. To help to understand the experiences in the pre as well as post reform years, keeping the colonial experience at the background.The course covers planning exercise in India and various issues involved in agricultural, industrial and foreign trade sectors and international financial institution. On completion of the course, students will know about -
		CO1	How the Indian economy is changing toward a market-based economy. Students know about Planning in India and economic reform.
		CO2	What are the basic features of the Indian Economy?
		CO3	Agricultural economy in India.
		CO4	The industrial economy in India.

GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE RAIPUR

DEPARTMENTOF ECONOMICS

OUTCOMES OF U.G. AND P.G. COURSES

2022-23

B.A.III SEMESTER	**NEP**	Macro Economics	It provides knowledge regarding the formulation of broad economic policies. in this course students will learn concept of national income. employment theories, characteristics of trade cycle, theories of international trade, external balance and international financial institution. On completion of the course, students will know about-
		CO1	Students will understand the national income concept and familiarize the basic difference between the classical and Keynesian economics
		CO2	Employment theory .
		CO3	The Nature and characteristics of trade cycle.
		CO4	Importance of international trade and BOP in economy.
B.A. IV SEMESTER	**NEP**	Money, Banking and Public Finance	It attempts to impart an understanding of monetary economics. It describes carefully the basics of monetary economics like money, value of money, theories of money and provide basic knowledge about banking system. It also enables learners to know the role of public authorities in raising revenue and its spending. On completion of the course, students will know about-
		CO1	Monetary economics. Inflation and measures to control inflation.
		CO2	Banks, their role in the economy and Central Banking System.
		CO3	Basic concept of public finance.
		CO4	Taxation in India. Public debt and concept of budget

GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE RAIPUR

DEPARTMENTOF ECONOMICS

OUTCOMES OF U.G. AND P.G. COURSES

2022-23

B.A.III YEAR	Paper I	Development and Environmental Economics	It makes the students to understand the aspect of development process in low income counties and also basic theories of economic growth and development. Economics as environmental problems are the burning issues of present day, the study of environmental economics helps them to know the methods of controlling environment pollution and thereby to achieve sustainable development. On completion of the course, students will know about-
		CO1	Students will learn about the concept of economic growth and development and learn how to measuring development.
		CO2	Population, poverty & Environment relation and models of growth.
		CO3	Different Models of growth.
		CO4	Importance of sustainable development.
		CO5	Impact of Social sectors on economic development and policy implementation
	Paper II	Statistical Methods	This course is to equip the students with primary statistical and mathematical tools for analyzing economic problems. On completion of the course, students will know about -
		CO1	Basic knowledge of Statistics.
		CO2	Measurement of central tendencies
		CO3	Measurement of dispersion
		CO4	Measurement of correlation
		CO5	Measurement of index number and time series

GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE RAIPUR

DEPARTMENTOF ECONOMICS

OUTCOMES OF U.G. AND P.G. COURSES

2022-23

M.A. SEMESTER-I	Paper I	MICRO ECONOMIC ANALYSIS	Micro-economics familiarizes the students with fundamental concepts of the subject. By building theoretical foundation, this course prepares students for studying applied courses. It also sets the foundation for an advanced-level course in the later part of the program. It helps in preparing the students for offering economics as an optional subject in civil services and similar examinations. The Outcome of the paper is to analyse the economic behaviour of individuals, firms and markets. It is mainly to equip the students in a rigorous and comprehensive understanding with the various aspects of consumer behaviour and Economic welfare, Firms behaviour and the theory of imperfect markets and equilibrium in different conditions.
	Paper II	MACRO ECONOMIC ANALYSIS	Macro Economics paper provides theoretical foundation of some advanced issues and policies. The paper attempts to discuss the functional relationships between economic aggregates. It helps understand the overall structure of the economy in a theoretical perspective at higher level. By the end of the course, the student will be able to understand:
	Paper III	QUANTITATIV E METHODS	Outcome of this paper is to develop mathematical approach in analysis of economic problems. It mainly focuses on those mathematical techniques which are directly useful in economic analysis. All the techniques are explained with examples of economics. Paper aims to familiarize the students with basic statistical techniques. Students should be able to develop knowledge about various statistical tools used for data interpretation. .By the end of the course, the student will be able to understand :
	Paper IV	INDIAN ECONOMIC POLICY	Indian Economy Policy shall provide basic knowledge on national income accountings, various issues involved in agricultural, industrial, financial, trade sectors and public institutions. By the end of the course, the student will be able to understand:
	Paper V	INDUSTRIAL ECONOMICS	The course for Industrial economics deals with basic concepts of industry, market product, industrial locations and industrial marketing. By the end of the course, the student will be able to understand:

GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE RAIPUR

DEPARTMENTOF ECONOMICS

OUTCOMES OF U.G. AND P.G. COURSES

2022-23

M.A. II SEMESTER	Paper I	MICRO ECONOMIC ANALYSIS	This advanced level core-course strengthens theoretical foundations of the subjects and develops deeper understanding among students. It also enhances capacity for understanding applied issues in the subject matter and develops interest in research related issues. By the end of the course, the student will be able to understand:
	Paper II	MACRO ECONOMIC ANALYSIS	Macro Economics paper provides theoretical foundation of some advanced issues and policies. The paper attempts to discuss the functional relationships between economic aggregates. It helps understand the overall structure of the economy in a theoretical perspective at higher level. By the end of the course, the student will be able to understand:
	Paper III	RESEARCH METHODOLOGY AND APPLICATIONS	Paper aims to familiarize the students will have basic statistical techniques. This is a course for studying various methods for conducting social science research. It deals with various approaches, methods, tools and techniques.
	Paper IV	INDIAN ECONOMIC POLICY	A thorough understanding on Indian Economic System. Know about the policy issues relating to economy of India. Contemporary Issues in Indian Economy shall provide basic knowledge on national Income accountings, various issues involved in agricultural, industrial, financial, trade sectors, public institutions and finally human resources development. By the end of the course, the student will be able to understand:
	Paper V	LABOUR ECONOMICs	The paper makes students aware of different theories on labour and employment from the point of view of economic research. It provides a details analysis on the latest development of labour market in developing countries with reference to India. The paper laid a special emphasis on informal sector and the problem of labour in India. By the end of the course, the student will be able to understand:

GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE RAIPUR

DEPARTMENTOF ECONOMICS

OUTCOMES OF U.G. AND P.G. COURSES

2022-23

M.A. **III - SEMESTER**	Paper I	ECONOMICS OF GROWTH	The paper provides a fundamental foundation of basic growth and development issues, approaches and models. The paper attempts to discuss the structure and change in variables. It helps understand the overall static and dynamic perspectives of the economy from a purely theoretical perspective. An insight into the need for sustainable economic development. Study about Human Development Indicators and their role in designing development programmes. By the end of the course, the student will be able to understand :
	Paper II	INTERNATIONAL TRADE	To provide strong theoretical background to the students on the subject of international trade. It also helps understands the empirical aspects such as trade reforms and their impact on India economy. By the end of the course, the student will be able to understand :
	Paper III	PUBLIC FINANCE	The purpose of this course is to give an understanding of the role of the state in fostering economic activities via budget and fiscal policies. This course enables the students to understand the various issues between the central and State Government. Considering the increasing role of Government in the economy, this course aims to generate theoretical and empirical understanding of students about a different aspect of Governmental activities and their rationality. It covers fundamental concepts of public economics, public expenditure, public revenue, and public debt with special reference of Indian economy. By the end of the course, the student will be able to understand :
	Paper IV	ENVIRONMENTAL ECONOMICS	In environmental economics, it also provides theoretical and applied understanding on diverse frameworks of national and global environmental problems, analytical tools, institutional and regulatory mechanisms etc. By the end of the course, the student will be able to understand :-
	Paper V ELECTIVE	A. DEMOGRAPHY / B. AGRICULTURE ECONOMICS	Demographic study is very important for any country's economic development. Student learn about meaning, importance different field of demography. To make the students aware of the importance of population in economic development and the various theories that explain the growth of population in a country. The paper also enlightens the students on the quantitative and the qualitative aspects and characteristics of the population through various demographic techniques. The paper provides Economic and demographic features inter linkages in development. By the end of the course, the student will be able to understand :

GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE RAIPUR

DEPARTMENTOF ECONOMICS

OUTCOMES OF U.G. AND P.G. COURSES

2022-23

M.A.IV --SEMESTER	Paper I	ECONOMICS OF DEVELOPMENT AND PLANING	Student acquaint with the basic concepts and issues of growth and development. Provide an insight into the modern approaches to economic development. In this paper students know about deferent plans and their achievement and different models of development. By the end of the course, the student will be able to understand :
	Paper II	INTERNATIONAL ECONOMICS	To provide strong theoretical background to the students on the subject of international trade. It also helps understands the empirical aspects such as trade reforms and their impact on India economy. By the end of the course, the student will be able to understand :
	Paper III	PUBLIC ECONOMICS	Considering the increasing role of Government in economy, this course aims to generate theoretical and empirical understanding of students about different aspect of governmental activities and their rationality. It covers fundamental concepts of public economics, public expenditure, public revenue, and public debt with special reference of Indian economy. By the end of the course, the student will be able to understand :-
	Paper IV ELECTIVE	A. ECONOMICS OF SOCIAL SECTORS/ B. WELFARE ECONOMICSS	This course is rather an amalgamation of many applied themes and teaches students to analyze them from theoretical perspective. On top of theoretical courses, the students learn to analyze the issues related to sustainability of natural resources, economic impact of pollution, economics of education and economics of healthcare. This advanced level course builds capacity to examine social issues from theoretical perspective of economics. By the end of the course, the student will be able to understand :
	Paper V	PROJECT	

GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE RAIPUR

DEPARTMENTOF ECONOMICS

OUTCOMES OF U.G. AND P.G. COURSES

2022-23

Part II:	Programme outcome		
Name of programme/degree	Name of subject	Programme outcome	
B.A./B.Sc./B.Com./B.Sc. H.Sc.		B.A.ECONOMICS	
		PSO1	Students will be able to learn fundamental of Economics.
		PSO2	Students graduates for employment and further study as economists.
		PSO3	The students with the opportunity to pursue courses that emphasizes quantitative and theoretical aspects of Economics.
		PSO4	Students with the opportunity to focus on applied and policy issues in Economics.
		PSO5	Programmers that allow the students to choose from a wide range of economic specialization;
		PSO6	Students will get a well-resourced learning environment for Economics.
		PSO7	Students will be able to Understand the behaviour of Indian and World economy.
		PSO8	Students will be able to analyze macroeconomic policies of India.
		PSO9	Students will understand economic variables like inflation, poverty, inequality and unemployment.
		PSO10	Students will understand the behaviour of financial, money and factor market.

GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE RAIPUR

DEPARTMENTOF ECONOMICS

OUTCOMES OF U.G. AND P.G. COURSES

2022-23

M.A.	M.A.--ECONOMICS	Programme outcome	
		M.A.--ECONOMICS	Through organizing guest lectures, workshops, seminars, industrial visit and extension activities it enables students to learn economics, particularly its applications and foster the development of their own skills in economic reasoning and understanding.
		PSO1	The students will be able to analyze the Economic Issues related to national and international scenario.
		PSO2	This programme helps to understand the various Economic Institutions in the world and their working principles.
		PSO3	The curriculum helps to create the capacity to work effectively in a multidisciplinary environment.
		PSO4	The students will be able to find a career in Economics.
		PSO5	The students will be able to understand how economic policies affect the common people through societal interactions.
		PSO6	The students will be able to utilize the research spheres of Economics.
		PSO7	The students will be able to provide suggestions for economic policy.
		PSO8	The student will be geared up for advance studies leading to M.Phil. and PhD.

Name 0f Department : Geography 2022-23

Name of Programme	Course/Paper	Name of course/Paper	Course outcome
B.A./B.Sc.-I	Paper I	Geomorphology	Understand different theories of the earth. Gain knowledge about earth's interior. Develop an idea about concept of earth's movements and related topography. Acquire knowledge about different process of denudation Understand the processes of erosion, deposition and resulting landforms. Explain the development of drainage system in uniclinal and folded structure. Understand concept of normal cycle of erosion and its interruption.
	Paper II	Geography of Human and cultural landscape	Gain knowledge about major themes of human geography. Develop an idea about space and society. Build an idea about population growth and distribution of population.
		Practical	Developing an idea about scales and how to draw different types of scales; like linear, diagonal Framing a clear concept on map projections.

			Read and prepare the map Use and importance of maps for regional development and decision making
B.A./B.Sc. II	Paper I	Economic Geography	To understand economy of world recognize and analyze the distribution of resources like agriculture, minerals, industries and human response. To know about the indicators of developed and developing world . They will be able to acquire the knowledge of Human Geography and will correlate it with their practical life. Know about population –resource relationship.
	Paper II	Geography Of India	To understand India in terms of various regional divisions, their important characteristics, Intra- regional and inter- regional linkages: to analyses the natural and human resource endowments, their conservation and management. To sensitize the students with development issues and policies and programmers designed for regional development.
		Practical	Forming a clear concept on map projections. Lessons on meteorological instruments like maximum and minimum thermometer, rain gauge, dry and wet bulb thermometer. Learning about prismatic surveying.
B.A./B.Sc. III	Paper I	Resource And Environment	Develop an idea about resource. Understand the concept of different types of resources.

			Acquire knowledge about different types of power and mineral resources. Explain population - resource relationship and different types of population resources. Gain knowledge about concept, scope of environmental geography and components of environment. Develop an idea about human-environment relationships.
	Paper II	Geography of India with Special Reference to Chhattisgarh	They can know about their own countries land formation, climate and natural vegetation. They understand the economic resources of India. They understand the social distribution of population of their country. Develop an idea about regionalisation of India.
		Practical	Necessity of field report in practical geography; collection of data and how to prepare a report from the data collected. Forming a clear concept on map projections. Gain knowledge about topographical maps and apply this knowledge in ground surface. Identification of different types of rock and minerals.
M.A./M.Sc.- I Sem			
	Paper I	Geomorphology	Understand different theories of the earth. Gain knowledge about earth's interior. Develop an idea about concept of earth's movements and related topography.

		Acquire knowledge about different process of denudation Understand the processes of erosion, deposition and resulting landforms. Explain the development of drainage system in uniclinal and folded structure. Understand concept of normal cycle of erosion and its interruption.
Paper II	Climatology	Learn the interaction between the atmosphere and the earth's surface. Understand how atmospheric moisture works. Students will learn about the atmosphere and the climate, pressure belts, wind systems, monsoon and their importance, difference between climate and weather.
Paper III	Geographical Thought	To introduce the students the philosophical and methodological foundations of the subject and its place in the world of knowledge. To familiarize them with the major landmarks in development of geographic thought at different periods of time and space.
Paper IV	Advanced Geography of India	They can know about their own countries land formation, climate and natural vegetation.

			They understand the economic resources of India. They understand the social distribution of population of their country. Develop an idea about regionalisation of India. They can know about their own countries land formation, climate and natural vegetation. They understand the economic resources of India. They understand the social distribution of population of their country. Develop an idea about regionalisation of India.
M.A./M.Sc.-II Sem.	Paper I	Geography Of Chhattisgarh	The module focuses on the regional geography of Chhattisgarh a. Physical relief b. Drainage c. Climate d. Soil e. Natural vegetation. Their characteristics and distribution; deforestation and conservation of forest. Also focuses on agriculture, power resources and industries Familiarizing the students with different concept of population geography like growth, distribution and migration.
	Paper II	Oceanography	The objective of the course is to introduce students to the many facts of Oceans such as evolution of the oceans,

		Physical and chemical properties of sea water, atmospheric and oceanographic circulation The fascinating world of marine life and the characteristic of marine environment and the impact of man on the marine environment.
Paper III	Agriculture Geography	To familiarize the students with the concept, origin, and development of agriculture; To examine the role of agricultural determinants towards changing cropping patterns. Intensity, productivity, diversification and specialization. The course further aims to familiarize the students with the application of various theories, models and classification schemes of cropping patterns and productivity. Its objectives are also to discuss environmental, technological and social issues in agricultural sector with special reference to India
Paper IV	Urban Geography	Students can explain the town and cities in India and World perspective. Gain knowledge about the history of urbanization in the developed and developing countries. They can understand the functional differences between rural and urban settlements. Students can define the problems of urban area. And try to solve them. They will know the characteristics of urban settlement.
		To be able to identify the urban environmental problem and how to solve those problem.
	Practical	Getting familiar with underlying structures with the help of geological maps.

			direct interaction of different types of surveying instruments like Dumpy level and Theodolite
M.A./M.Sc.-III Sem	Paper I	Economic Geography	Develop an idea about resource. Understand the concept of different types of resources. Acquire knowledge about different types of power resources.
			Explain population - resource relationship and different types of population resources. Understand different types of economics activities.
			Indentify farming in humid tropics. Know about the various industrial occupations.
	Paper II	Research Methodology	Learn the significance of field work in geographical studies.
			Understand the meaning of field and identifying the case study.
			Know about different types of field techniques. Develop an idea about research problems. Know about different types of sampling. Gain knowledge about association and correlation.
	Paper III	Regional Development And Planning	Gain knowledge about definition of region, evolution and types of regional planning.
			Develop an idea about choice of a region for planning.
			Build an idea about theories and models for regional planning.
			Know about measuring development indicators.
	Paper IV	Population Geography	Understand the nature of population. Know about composition of population, like- age, sex marital status, family, economic composition and language.

		Analyze the global trend and patterns of population growth in developing countries, and migration patterns.
		Evaluate the population growth theory and migration theories.
		Understand the population policies in different countries.
	Practical	Getting to know superficially about remote sensing and aerial photo interpretation with the help of pocket stereoscope.
		They can know about concepts, components, development, platforms and types of remote sensing and GIS.
		They understand about Aerial photography and Satellite Remote Sensing.
		They can know about the interpretation of Air photographs and Satellite imagery.
		Learn the significance of statistics in geography.
		Understand the importance of use of data in geography
		Gain knowledge about association and correlation.
Paper I	Social Geography	To familiarize the student with the society through concept and social theories, philosophical approaches and spatial processes.

M.A. IV SEM.			To examine the processes of social regional formats in India with the help of socio cultural and historical factors.
	Paper II	Political Geography	Know about political geography.
			To expose the student to the strategic importance of of geographical parameters in the political scenario of the global regional national and local level.
			To sensitize the student to the geopolitical dimensions and understanding of conflict and regional co-operations. Make student familiar with the polity of world power.
	Paper III	Environmental Geography	Gain knowledge about concept, scope of environmental geography and components of environment. Develop an idea about human-environment relationships.
			Build an idea about ecosystem Know about environmental programmes and policies.
	Paper IV	Disaster Management	Understand the definition, classification of hazards and disasters
			Gain knowledge about approaches to hazard study.
			Develop an idea about factors, consequences and management of earthquake, landslide, flood and riverbank erosion.
			Acquire knowledge about human induced disaster.
		Socio-Economic survey	Main objective of the field work is to provide the students to understand the ground reality of a chosen village or ward by observation

Conducting the socio economic survey of the house hold with the help of specially prepared questionnaire of that particular area.

Part II: Programme outcome	Name of subject	Programme outcome
		After successful completion of three year degree program in Geography student should be able to: -
B.A./B.Sc.	GEOGRAPHY	Geography mainly concerns changes in spatial attributes in a temporal perspective. The UG programme in geography is tailored to meet the students' specific educational and professional goals in mind. It focuses on spatial studies, qualitative as well as quantitative, and emphasises on human-environment relationship. During the first year of the programme, the students are trained on advanced concepts of physical and human geography. The third year allows them to concentrate on specific areas of the subject, on which they complete their field reports. After completing the course, the students will be amply prepared for professional careers in geography and allied disciplines like GIS and Remote Sensing. They will also be able to pursue M.A. /M.Sc. Course in Geography. Student will gain the knowledge of physical geography. Student will have a general understanding about the geomorphological and geotechnical process and formation. They will be able to

correlate the knowledge of physical geography with the human geography.

They will be able to acquire the knowledge of Human Geography and will correlate it with their practical life.
As a student of Geography UG Course they will be capable to develop their observation power through field experience and in future they will be able to identify the socio-environmental problems of a locality.
As a student of Geography UG Course they will be capable to develop their observation power through field experience and in future they will be able to identify the socio-environmental problems of a locality.
Identify the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of societal and environmental change.
After successful completion of two year post Graduation degree program in Geography student should be able to: -

M.A./M.Sc. GEOGRAPHY

1. Students will acquire an understanding of and appreciation for the relationship between geography and culture.
2. Students will read, interpret, and generate maps and other geographic representations as well as extract, analyze, and present information from a spatial perspective.
3. Students will have a general understanding of global human population patterns, factors influencing the distribution and mobility of human populations including settlement and economic activities and networks, and human impacts on the physical environment.
4. Students will be able to think in spatial terms to explain what has occurred in the past as well as using geographic principles to understand the present and plan for the future.
5. Students will have a general understanding of how the physical environment, human societies, and local and global economic systems are integral to the principles of sustainable development.
6. Students will have a general understanding of the various theoretical and methodological approaches in both physical and human geography and be able to develop research questions and critically analyze both qualitative and quantitative data to answer those questions.
7. Students will be able to present completed research, including an explanation of methodology and scholarly discussion, both orally and in written form and, wherever possible, utilize cartographic tools and other visual formats.

GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE RAIPUR

DEPARTMENT OF HISTORY

OUTCOMES OF U.G. AND P.G. COURSES

2023-24

Name of Program	Course/Paper	Name of course/Paper	Course outcome (should include one point for each unit of the paper)
B.A.Vth SEMESTER	**NEP**	Modern History of India(1767-1857)	This course is designed to provide a basic understanding of Early Modern history of India from 1761 to 1857 with special focus on the arrival of Europeans in India, the battle of Plassey, Buxar and the capture of Bengal in 1765. The changing land revenue system in India due to British policies and its effect on various social classes – Farmers laborers , women. The rise of Indian Renaissance under Brahma samaj and Arya samaj. The course includes the understanding of the relation of EIC with princely states, development of western education and press and administrative system under British period with special focus on Chhattisgarh .On completion of the course, students will know about-
		CO1	Arrival of Europeans in India,the battle of Plassey, Buxar
		CO2	Subsidiary Alliance , British administrative reforms.
		CO3	European Mercantilism in India , Downfall of agriculture and peasant movement.
		CO4	Indian Renaissance and social reform movement
		C05	Administrative system of C.G. during British period Tribal culture of C.G.
B.A. VI SEMESTER	**NEP**	Modern History of India(1858-1947)	It makes learners understand the concepts of nationalism ,the causes of revolt of 1857 and the establishment of INC. The understanding of partition of Bengal leading to the swadeshi movement, revolutionary movement with focus on the activities of INC and muslim league. The study focus on Gandhian movement-NCM,CDM,QIM The course covers the understanding of Indian constitution ,1857 revolt in C.G. , Muria rebellion and bhumkal movement in Bastar, Gandhian movement in C.G. and integration of princely states.

GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE RAIPUR

DEPARTMENT OF HISTORY

OUTCOMES OF U.G. AND P.G. COURSES

2023-24

			On completion of the course, students will know about -
		CO1	Revolt of 1857 and rise of Nationalism
		CO2	Partition of Bengal and Swadeshi movement
		CO3	Revolutionary movements and Gandhian movement
		CO4	Independence and partition of India
		C05	Gandhian movement in C.G. and Muria and Bhumkal movement

DEPARTMENT OF PUBLIC ADMINISTRATON

Program Specific Outcomes

Name of the Program: - Public Administration (M.A.)

On Completion of the program graduates will be expected to able to:

1. Apply Critical thinking and problem solving skills to complete strategic decisions.
2. Analyze issues through the collection and use of qualitative and quantitative data.
3. Interact with respect and fairness with diverse group of people.
4. Manage financial resources responsibility.
5. Analyze the implementation and effects of public policies and leave.
6. Use ethical leadership in transparent, accountable decision making for the common good.
7. A respect for and ability to engage delivery of perspective and interest involved in local governance.
8. Create and evaluate strategic plans to promote organizational effectiveness and minimize risk.
9. Communicate organizational needs and decision effectively in written and oral forms.
10. Career in Local and State govt. services, central services.
11. Career opportunities in the political world.
12. Work as an administrator for a political action, educational or public interest groups, for political party or lobbying organizational or on a campaign.

Code-Public Administration –(101)	**Paper I: Principles of Public Administration** 1. The concept of public administration private administration & management. 2. Approaches to the study of public administration & development of the discipline. 3. Concept of organization; line & staff departments, public corporation & independent regulatory commission. 4. Concept of centralization, decentralization & delegation. 5. Administrative process like - policy formulation, decision making communication, leadership & motivation.
Code- Public Administration (102)	**Paper II: Theories of Public Administration** The student will acquire knowledge about: 1. Administrative theories. 2. Management aids. 3. Concept of E-governance, Good-Governance, RTI, Ethics in public administration. 4. Some issues- crisis, stress, Time management, office and file management 5. Accountability of public Administration
Code- Public Administration (103)	**Paper III: Indian Administration** The student will acquire knowledge about: 1. Evolution & present scenario of Indian Administration. 2. Parliamentary democracy & political executive. 3. Departments & board & commission. 4. Union-state relations, administrative reforms

Code – Public Administration (104)	**Paper IV: Development Administration** The student will acquire knowledge about: 1. Concept & theory of development administration. 2. Features of developed 7 developing countries. 3. Concept of modernization n, economic development & development programs. 4. Political development, social change and planning machinery in India 5. Development and bureaucracy, public participation & environment development.
Code- Public Administration (201)	**Paper I : State Administration** 1. State government &administration. 2. Organization & working of state finance commission 7 state election commission 7 state planning commission. 3. Administration at the districts level. 4. Analyze some administrative issues like minister secretary relationship, ARC-I & II, administration corruption.
Code- Public Administration (202)	**Paper II:Municipal Govt. of India** 1. Concept of local selff Govt. & 74th constitutional amendment. 2. Organization & functions of municipal corporations. 3. Personnel administration of municipal employees & state control and municipal administration & deliberative-executive relationship. 4. Committee system & problems & reforms in local self govt. Smart City Project, Swarna Jayanti Salui Rojgar Yojna.
Code- Public Administration (203)	**Paper III :Rural Development & Tribal Welfare** 1. Concept of rural developed dimensions of rural poverty & role of NGOs in rural development. 2. Rural development policy & strategy approaches to rural development machinery for rural development in India. 3. Various rural development schemes Like MNREGA, Swachhta Bharat Mission, social audit &Digital India. 4. Tribal welfare at district, block & village level in Chhattisgarh, legislation, problems & schemes tribal welfare.
Code- Public Administration (204)	**Paper IV: Panchayati Raj** 1. Concept & evolution of Panchayati Raj 73rd constitutional amendment. 2. Structure, Power & functions of three tier Panchayati Raj in Chhattisgarh. 3. Source of revenue of PRIs, state control over PRIs & weakens sections & women. 4. Deliberative - executive relationship in PRIs is, political parties & pressure group in PRIs is, problems of PRIs. 5. E- Panchayats self-help groups & public distribution system in Chhattisgarh.
Code- Public Administration. (301)	**Paper I: Comparative Public Administration** 1. Concept & evolution of comparative public administration. 2. Approaches to study of comparative public

	administration. 3. Analyze Weber's typology of authority & ideal type of bureaucracy, Rig's typology of societies & prismatic-Sala model. 4. Administrative system of U.K., China, U.S.A. & France. 5. Analyze whitleysim in Britain IRC in U.S.A. prefect in France, ombudsman - Sweden & role Communist party in China.
Code- Public Administration. (302)	**Paper II:Human resource development & Personnel Administration** 1. Concept of personnel administration & human resource management. 2. Concept & theories of Max Weber & Karl Marx About bureaucracy. 3. Recruitment, position classification & training of personnel in UK, U.S.A.& France. 4. Concept of promotion, discipline morale & motivation. 5. Employer & employee relationship.
Code- Public Administration. (303)	**Paper III:Research Methodology in Public Administration** 1. Concept of research design, hypothesis and sampling. 2. Construction of questionnaires and schedules role of interviewer. 3. Other methods of data collection. 4. Processing of data classification, tabulation and analysis of data. 5. Measurement of central tendency.
Code- Public Administration. (304)	**Paper IV: Administrative Law** 1. Concept of administrative law & rule of law 2. Concept of delegated legislation legislative & judicial control over delegated legislation. 3. Concept & Functions of administrative tribunals. 4. Concept of natural justice legal remedies & liabilities of state. 5. Lokpal & Lokayukta, central vigilance commission & public interest litigation (PIL)
Code- Public Administration.(401)	**Paper I:Civil Service in India** 1. Concept and structure of civil service. Recruitment, training & promotion. 2. Salary administration. 3. Structure and function of UPSC, PSC & SSC. 4. Political right and right to strike & condition of service, conduct rules disciplinary action and machinery for redress of civil service grievances.
Code - Public Administration. (402)	**Paper II: Administrative Thinkers** 1. Theories of Kautilya. 2. Theories of Woodrow Wilson, F.W.Taylor, Henri Fayol, Mary Parker Follet, Herbert Simon 3. Max Weber, F.W. Riggs, 4. Luther Gullick, Lyndall Urwick, George Elton Mayo & Abraham Maslow.
Code-Public Administration. (403)	**Paper IV: Management of Public Enterprises and Industrial Relations** **1.** The role of public enterprises in national economy

	&problems of nationalization. **2.** Focus of organization, government control & parliamentary accountability. **3.** Concept of managerial personnell & problem of industrialization. **4.** Labor welfare and its influence social security in India. U.K. and USA.
Code- Public Administration. (404)	**<u>Paper IV: Financial Administration</u>** **1.** Ministry of finance and financial administration. **2.** Budget types & techniques. **3.** Control over public expenditure **4.** Finance commission, 14th finance commission, fiscal management policy and monetary policy.

M.A. POLITICAL SCIENCE

Government D.B. Girls Postgraduate College, Raipur

Programme Outcomes and Course Outcomes

PSO

SEMESTAR I

Paper	Title	Credit	Marks						Total
			Theory		Test		Seminar		
			Max.	Mini.	Max.	Mini.	Max.	Mini.	
Paper-I	Western Political Thought POL.101/21		80	16	10	2	10	2	100
Paper-II	Comparative Politics POL.102/21		80	16	10	2	10	2	100
Paper-III	Public Administration POL.103/21		80	16	10	2	10	2	100
Paper-IV	Chhattisgarh Govt.& Politics POL.104/21		80	16	10	2	10	2	100

SEMESTAR II

Paper	Title	Credit	Marks						Total
			Theory		Test		Seminar		
			Max.	Mini.	Max.	Mini.	Max.	Mini.	
Paper-I	Political Thought POL.201/21		80	16	10	2	10	2	100
Paper-II	Politics of Developing countries and comparative Politics POL.202/21		80	16	10	2	10	2	100
Paper-III	Public administration (Local autonomy government) POL.203/21		80	16	10	2	10	2	100
Paper-IV	Indian Foreign Policy POL.204/21		80	16	10	2	10	2	100

SEMESTER III

Paper	Title	Credit	Marks						Total
			Theory		Test		Seminar		
			Max.	Mini.	Max.	Mini.	Max.	Mini.	
Paper-I	Indian Government and Politics POL.301/21		80	16	10	2	10	2	100
Paper-II	Theory of International Politics POL.302/21		80	16	10	2	10	2	100
Paper-III	Research Methodology POL.303/21		80	16	10	2	10	2	100
Paper-IV	International Organization POL.304/21		80	16	10	2	10	2	100
Elective Paper	Political Sociology		--------	--------	-------	-------	--------	-----	------

SEMESTER IV

Paper	Title	Credit	Marks						Total
			Theory		Test		Seminar		
			Max.	Mini.	Max.	Mini.	Max.	Mini.	
Paper-I	The State Politics in Indian Government POL.401/21		80	16	10	2	10	2	100
Paper-II	International Politics (Recent issues) POL.402/21		80	16	10	2	10	2	100
Paper-III	Research Techniques regional work POL.403/21		80	16	10	2	10	2	100
Paper-IV	International Law POL.404/21		80	16	10	2	10	2	100
Elective paper	Awareness with Civic Rigths								

PROGRAM OUTCOME

The Department is dedicated to promote teaching and research in diverse fields of political science including Indian politics, comparative politics, international relations and human rights while maintaining the scholarship in some of the conventional fields like political theory and political philosophy. Presently, the department is offering Master's and PhD programmes in Political Science. The learning outcomes of the programmes are as follows: • To develop comprehensive understanding of the subject by teaching both conventional and new areas of relevance in the domain of political theory and philosophy, Indian politics, comparative politics, public administration and international politics. • To develop comprehensive and interdisciplinary knowledge by emphasizing inter-linkages between various political, economic and social issues and challenges. • To generate socially-informed knowledge and cater to the educational upliftment of marginalized communities through papers like Political Ideas in Modern India • To develop theoretically rich and empirically grounded knowledge • To motivate and inform students about the opportunities and future prospects in the field. • To develop the overall personality of students and prepare them to compete and succeed in their endeavours. • To provide a progressive, healthy and vibrant environment to its students as well as teachers for the purpose of developing a department known for its academic and intellectual pursuit. • To inculcate the values of tolerance, progressiveness and fraternity that contributes towards the making of a healthy and prosperous society.

PROGRAME OUT COME

PO 1	Study of western and Indian political thought to analyse the various school of thought of Ideal, liberal , Marxist and modern thought.
PO 2	Introduction to various methods and approaches like comparative politics structural function approach development.
PO 3	Introduction to the study of the concept and study of public administration , principals of organisation ,personal financial administration in India and local autonomy
PO 4	Introduction to the creation government in Chhattisgarh .
PO 5	Indian Foreign Policy in current world scenario and study of international politics.
PO 6	Study research methodology and its various concept and techniques
PO 7	Study of international organisation and law post 2^{nd} world war
PO 8	Govt. And political in India and the states of India an analytical study
PO 9	Study of political sociology and role of civil society
PO 10	Concept of rights and cyber crime

PROGRAMME SPECIFIC OUTCOMES

PSO 1:	Understand the contribution of the main traditions of western political thinkers to political thought.
PSO 2:	Understand the processes and dynamics of Indian government and politics. It also familiarize with the vital contemporary emerging issues of centre state relation, political parties, emergence of new leadership at different levels, demand for autonomy movement, ethnic conflicts etc
PSO 3:	Acquaint with the basic concepts principles and dynamics of public administration
PSO 4:	Familiarise with important theories and issues of international politics.
PSO 5:	Acquaint with the diverse political systems especially the developed countries including China and Switzerland.
PSO 7:	Understand the basic concept and ideological orientations of political science discipline.
PSO 8:	Understand the contribution of the main traditions of Indian Political Thought.
PSO 9	An understanding the evolution development and trends of India's foreign policy.
PSO 10	Acquaint with the basics of International Law and the new trends in the realm of International law.
PSO 11	Familiarise with the problems and prospects of rural development of India.
PSO 12	Understand the cultural, social, political, economic and constitutional environment as a historical perspective of Indian Administration.

PSO 13	Understand the concept of political sociology, present paper deals with the concept of political socialization and explain the relationship of politics and society
PSO 14	Awareness with Civic Rights and human rights

COURSE OUTCOMES

paper I	**Western political thought**	**unit 1-Ancient & medieval thinkers** **unit 2-Medieval & utilitarianism thinkers** **unit 3-Liberal & Idealist thinkers** **unit 4-Marxist & modren thinkers**
Paper II	**Comparative politics**	**unit 1-Introduction to comparative politics** **unit 2-Development & approaches to study** **unit 3-Structural Functional approaches & other concepts** **unit 4-Political culture & other concepts**
Paper III	**Public Administration**	**unit 1-Introduction & types of administration unit 2-Approaches to the study and other concepts** **unit 3-Principles of organizatation** **unit 4-Various organizations ,bureaucracy**
Paper IV	**Govt. & Politics of C.G**	**unit 1-Introduction crectition Chhattisgarh** **unit 2-Administration in Chhattisgarh** **unit 3-Legistature in Chhattisgarh** **unit 4-Political of development in Chhattisgarh**
Paper I	**Political Thought**	**unit 1-Ancient & other modern thinkers of India** **unit 2-Modern Indian thinkers** **unit 3-Hegal,features of political theory** **unit 4-Recent political though**
Paper II	**Political developing countries and comprative politics**	**unit 1-Various political concepts** **unit 2-Classification of government** **unit 3-Political concepts &,legislative** **unit 4-Stady of executive & judiciary**

Paper III	**Public administration(Local autonomy government)**	**unit 1-Personnel administration and other concepts** **unit 2-Financial administration & Budget formation process in India** **unit 3-Control over public administration** **unit 4-Problems in public administration & redressal**
Paper IV	**Indian Foreign Policy**	**unit 1-Introduction to foreign policy & other concepts** **unit 2-Domestic & external determinants of Indian foreign policy** **unit 3-Relation with Super powers** **unit 4-Relation with Neighbours**
Paper I	**Indian Govt. and Politics**	**unit 1-Background & features of Indian constituon** **unit 2-Union government** **unit 3-Parliament & Supreme court** **unit 4-Political parties & pressure groups & judicial activism**
Paper II	**Theory of international politic.**	**unit 1-Development & methods of study International politics** **unit 2-Theories of International politics** **unit 3-Concepts of power etc…** **unit 4-Disarmament,regionalism etc…**
Paper III	**Research Methodology**	**unit 1-Introduction & problems of social research** **unit 2-Case study, social survey** **unit 3-Research design ,hypothesis & sources of data** **unit 4-Data collection & interview methodes**

Paper IV	**International Organization**	**unit 1-Introduction to international organizations etc…** **unit 2-Structure & function of International Organization & league of nation** **unit 3-Settlement of international disputes & International court** **unit 4-U.N.O. & social, economic development , post cold war**
Paper I	**Political Sociology**	**Unit 1- Political Sociology ,Ideology** **Unit 2- Political Modernization, Political participation** **Unit 3-Westernisation,Secularisation** **Unit 4- Multi culturalism and Co-existence**
	The State Politics in Indian government	**unit 1-Election commission, Union commissions & federal system** **unit 2-State government & state legislature** **unit 3-Impact of national state politics & political parties** **unit 4-Factors influencing Indian politics**
Paper II	**Theory of international politics(Recent issues)**	**unit 1-Non alignment, cold war, end of cold war** **unit 2-Important issues of post cold war era etc…** **unit 3-Third world and its problem** **unit 4-Foreign policies of major countries etc…**
Paper III	**Research Techniques regional work**	**unit 1-Questionnaire & schedule** **unit 2-Sampling & tabulation** **unit 3-Projective techniques & other concepts** **unit 4-Role of statistics & computer in research**

Paper IV	**International Law**	**unit 1-Introduction to international law** **unit 2-Jurisdiction & equality of states, law of wars** **unit 3-Termination of war, neutrality etc…** **unit 4-Blocked & other concepts ,limitations & possibilities of international law**
	Awareness with Civic Rigths	**Unit 1-Right, Preamble, Fundamental** **unit 2-Human rights, Karma Theory, Rights and obligation** **unit 3-Right to Information and Right to Education** **Unit 4- Right of women ,Righty against Cyber Crime**

GOVT. D.B. GIRLS' PG COLLEGE RAIPUR C.G.

DEPARTMENT OF PSYCHOLOGY

B. A. PSYCHOLOGY

PROGRAM OUTCOME-

B. A. with Psychology is a four-year degree program, students learn about the fundamental process of psychology, they get acquaintances with psychopathology, social and human development branches of psychology, foundation knowledge for tools and techniques regarding measurement and analysis of the behavior with research aptitude and applications of knowledge in real life situations.

PROGRAM SPECIFIC OUTCOME-

PSO1- Foster the comprehension of psychological science with special focuses on conceptual, theoretical and experimental methodologies to develop understanding of human mental process and behavior

PSO2-Skill development for the assessment of human behavior and mental process through experiment method

PSO3-Applications of fundamentals of psychology in every -day life situations with specific interest in the field of education, health, sports, relationships and consumer and management behavior

PSO4-Cultivate measurement aptitude for psychometric assessment of human behavior and mental processes

PSO5- Insight about the human developmental process

PSO6- Data analysis regarding psychological facts

PSO7-Understanding of research methodology

PSO8-Cultivating research aptitude

COURSE OUTCOME -

Understanding the subject matter of psychology with appreciation of the scope and the field of psychology, developing familiarity with basic concepts related to some foundational themes of study in psychology such as learning, memory, perception, thinking, emotion, motivation and human biological system including brain, developing familiarity with individual level phenomenon such as intelligence, and personality along with the practical application of psychology in professional and social situations and Understanding of psychological traits.

M.A PSYCHOLOGY

PROGRAM OUTCOME-

Masters' in Psychology is a four semester program; students develop in depth understanding of the fundamentals of psychological processes in individual and social level. They learn the core concepts of personality and human development. Practical applications of psychological knowledge with objectivity, with project and field study data generation and analysis regarding

the psychological facts, Practical experiences in institutions, hospitals and other psychological centres facilitate students to cultivate themselves as a psychologist.

PROGRAM SPECIFIC OUTCOME-

PSO1-Perceptual process, Perceptual consistency, Size, shape etc., Attention Type & theory, Basic concept of motivation & emotion, Concept of consciousness & self and Identity

PSO2 - Nature and historical background of Social psychology, social cognition, Social influence and Attitude, Prosocial behavior and anger management

PSO3-Introduction, Types and Methods of Psychological Research, Research Problem and Hypothesis, Research Designs, Dispersion, Inferential statistics and Method of Data collection

PSO4- Concept of Psychopathology & Classification System, Disorder of Anxiety, Somatoform, Psychotic Disorder (Mood Disorder), Mental Retardation, ADHD, ASD, Learning Disability

PSO5-Learning Process, Conditioning, Verbal Learning methods & material, Memory and types, Forgetting causes & theories, improving memory

PSO6 -Group dynamics and Behavior, Leadership and Psychology of Followers, Social Issues, Crowd psychology, Culture- cognition, organization, emotion, personality, health, Environment and Law

PSO7 - Experimental Designs, Analysis of Variance, Measures of Relationships, Regression and Factor Analysis

PSO8 - Basic concept, Brain Stimulation, Receptor & effectors, Sensory system, Nervous system, Sleep & Walking ,Stages of sleep Physiological mechanism of Sleep, Different therapies & mental health, Current issues & trends in Health Psychology (Life style, Health problem, Diabetes)

PSO9 -Introduction to Personality, theories of Personality of different Psychologists, Cognitive approaches of Personality, Indian concept of Personality (Yoga &Sankya)

PSO10- Scaling methods of construction of psychometric tests, Standardization process of Psychometric test, Adaptation of test, and use of Psychological test in applied field

PSO11 - Theories of thought process- concept formation and reasoning, Problem Solving strategy and Decision Making, Memory-process and models, Biological basis of Memory-biochemical factors and improving strategies

PSO12 - Theories in Educational psychology, Information Processing Models, Learning Styles Individual and Group differences in Intelligence, gender issues and Learning & Motivation

PSO13- Approaches to Clinical Psychology, Assessment of personality, Projective technique, and Behavioural measures to assess Personality, Psychometric test, Major Neuro-Psychological tests

PSO14 - Principles and process of Development, Method & theories, how life begin, characteristics , adjustment, hazards & Personality development, Psychosocial changes and

adjustment of adolescents & Adulthood, Personal ,Social & Vocational problems of Middle & Old age

PSO15 - Concept & Measurement of Intelligence and Aptitude, Test of Personality, Psychological testing in the applied field, Emotional Intelligence.

PSO16- Creativity, Intelligence and Problem solving, Abilities and Achievement, Multiple, Artificial and Determinants of Intelligence, Measurement of Human Abilities

PSO17 - Counselling- need, approaches, functions and techniques, Characteristics of a good counsellor, Techniques of Appraising the Client, Guidance and Research services, Special areas of guidance and counselling- marital, family, adolescent, educational, vocational, and the problem of guidance in India

PSO18 -Methods of Preventing Problems & Developing Resourcefulness & how to be assertive, Decision-making ability, conversational skills & physical fitness, Counseling techniques, Different methods for alerting maladaptive behaviour, Marital maladjustments, Child misbehaviour, methods for alerting fears & anxiety & treating Psycho physiological disorders

COURSE OUTCOME –

Students develop psychological aptitude. They get chance to explore the diverse fields of psychology such as basic processes of psychology, social, cognitive, developmental, educational, counseling and clinical field. Understand and execute assessment tools related to psychological processes and attributes like personality, intelligence, aptitude etc. They understand and apply appropriate quantitative and/or qualitative data analysis techniques. Practically impart psychological knowledge to intervene for mitigating psychological problems and promote positive behavior and well-being at individual, group, and social level.

PG DIPLOMA IN PSYCHOLOGICAL GUIDANCE AND COUNSELLING

PROGRAM OUTCOME-

PG diploma in psychological guidance and counselling is a yearly program for those individuals looking to advance to the first level of certified counsellor status and improve their ability to operate both personally and at work; this course provides a suitable path. Additionally, it seeks to provide students a solid foundation of competency in the use of counselling techniques.

PROGRAM SPECIFIC OUTCOME-

PSO 1: Demonstrate knowledge of the major theoretical approaches and findings in the field of psychological guidance and counselling.

PSO 2: Cultivate the skill to apply psychological assessment methods and principles to assess behaviour and mental health in guidance and counselling relevant settings.

PSO 3: Demonstrate skills and proficiency of the future psychologists, equipped with ability for counselling, guidance, mental training for performance enhancement based on knowledge and training through internships.

PSO 4: Developing research aptitude through projects and having opportunity of innovation in psychological research by developing psychological tools with sensitivity to ethical principles.

COURSE OUTCOME –

Student will have the opportunity to construct and present theoretical models based on a considerable body of knowledge about counselling skill methods in this course. The focus will be on helping students build a theoretical framework that will serve as the basis for a counselling approach.

COURSE OUTCOME

Course 31: Introduction to Sociology

CO1. The students after the completion of this course will be able to contemplate and comprehend and recognize the nature and scope of sociology.

CO2. The students after the completion of this course will be able to contemplate and comprehend and recognize the basic concepts of society, community, institution, association etc.

CO3. The students after the completion of this course will be able to contemplate and comprehend and recognize different social groups.

CO4. The students after the completion of this course will be able to contemplate and comprehend and recognize various social processes.

Course 32: Contemporary Indian Society

CO1. The students after the completion of this course will be able to contemplate and comprehend and recognize the classical view about Indian Society and Varna Vyavastha.

CO2. The students after the completion of this course will be able to contemplate and comprehend and recognize the structure and composition of Indian society.

Course 33: Society in India

CO1. The students after the completion of this course will be able to contemplate and comprehend and recognize various social problems like Casteism, Regionalism, and Communalism etc.

CO2. The students after the completion of this course will be able to contemplate and comprehend and recognize various social problems like Dowry, Domestic Violence, Divorce etc.

CO3. The students after the completion of this course will be able to contemplate and comprehend and recognize basic Institutions of society.

Course 34: Crime and Society

CO1. The students after the completion of this course will be able to contemplate and comprehend and recognize social structure and anomalies.

CO2. The students after the completion of this course will be able to contemplate and comprehend and recognize

meanings, causes, consequences and remedies of Terrorism.

Course 35: Sociology of Tribal Society

CO1. The students after the completion of this course will be able to contemplate and comprehend and recognize classification of tribal people.

CO2. The students after the completion of this course will be able to contemplate and comprehend and recognize socio cultural profile of tribe.

CO3. The students after the completion of this course will be able to contemplate and comprehend and recognize various tribal problems.

CO4. The students after the completion of this course will be able to contemplate and comprehend and recognize various tribal movements.

Course 36: Social Research Methods

CO1. The students after the completion of this course will be able to contemplate and comprehend and recognize & apply social survey and research.

CO2. The students after the completion of this course will be able to contemplate and comprehend and recognize & apply research design.

CO3. The students after the completion of this course will be able to contemplate and comprehend and recognize & apply techniques of data collection and statistics.

PSO

PSO31	The students after the completion of this programme will be able to understand and apply the knowledge of Introduction to Sociology in relevant profession and day today life.
PSO32	The students after the completion of this programme will be able to understand and apply the knowledge of Contemporary Indian Society in relevant profession and day today life.
PSO33	The students after the completion of this programme will be able to understand and apply the knowledge of Society in India in relevant profession and day today life.
PSO34	The students after the completion of this programme will be able to understand and apply the knowledge of Crime and Society in relevant profession and day today life.
PSO35	The students after the completion of this programme will be able to understand and apply the knowledge of Sociology of Tribal Society in relevant profession and day today life.
PSO36	The students after the completion of this programme will be able to understand and apply the knowledge of Social Research Methods in relevant profession and day today life.

----:: PROGRAM OUTCOMES ::----

PO1	The undergraduate programme in Hindi Literature / English Literature / Economics / Political Science / History / Sociology / Geography / Music / Home Science / Psychology / Kathak Nritya is aimed at providing the students necessary inputs so as to set forth the task of bringing about new and innovative ideas/concepts so that the formulated model curricula in Hindi Literature / English Literature / Economics / Political Science / History / Sociology / Geography / Music / Home Science / Psychology / Kathak Nritya becomes in tune with the changing scenario and incorporate new and rapid advancements and multi-disciplinary skills, societal relevance, global interface, self-sustaining and supportive learning.
PO2	The undergraduate programme in Hindi Literature / English Literature / Economics / Political Science / History / Sociology / Geography / Music / Home Science / Psychology / Kathak Nritya besides teaching the basic concepts of Hindi Literature / English Literature / Economics / Political Science / History / Sociology / Geography / Music / Home Science / Psychology / Kathak Nritya should in addition have broader vision for students so that the students therefore be exposed to societal interface of Hindi Literature / English Literature / Economics / Political Science / History / Sociology / Geography / Music / Home Science / Psychology / Kathak Nritya and the role of Hindi Literature / English Literature / Economics / Political Science / History / Sociology / Geography / Music / Home Science / Psychology / Kathak Nritya in the development of arts and social sciences.
PO3	The students will be able to think critically and take informed decisions after identifying the accuracy and validity of their assumptions and ideas from intellectual, organizational, and personal perspectives.
PO4	The students will be able to communicate effectively through speaking, reading, writing and listening clearly in one Indian language and thereby express themselves to the world by connecting with different ideas, books, people, media and technology
PO5	The students will be able to interact socially and stimulate views, reconcile disagreements and help reach consensual conclusions.
PO6	The students will be able to demonstrate compassionate social concern and act with cognizant awareness of issues to contribute in civic life by volunteering impartially towards national development and thereby deliver effective citizenship.
PO7	The students will be able to ethically recognize different value systems, understand the moral dimensions of individual decisions and accept responsibility for them.
PO8	The students will be able to recognize the issues of environmental perspectives and appreciate sustainable development for long term environmental sustainability.
PO9	The students will be able to engage themselves in life-long self-determining and learning in the comprehensive background of socio-technological changes for continued self-directed and life-long learning

FACULTY OF SOCIOLOGY

Government D. B. Girls Postgraduate College, Raipur

Programme: M.A - Sociology

PROGRAMME CODE: MASOC08

SCHEME OF PROGRAMME: CBCS

Programme Outcome (PO)

PO1	Students would be able to think critically on societal issues and its national & global implications.
PO2	Students would be able to shoulder social and ethical responsibilities in its true form and hence develop into a better citizen.
PO3	Students would be able to perceive social issues both objectively and subjectively.
PO4	Students would be able to develop better social interaction skills for greater exchange of thoughts and ideas.
PO5	The students will be able to think critically and take informed decisions after identifying the accuracy and validity of their assumptions and ideas from intellectual, organizational, and personal perspectives.
PO6.	The students will be able to communicate effectively through speaking, reading, writing and listening clearly in one India language and thereby express themselves to the world by connecting with different ideas, books, people, media and technology.
PO7.	The students will be able to interact socially and stimulate views, reconcile disagreements and help reach consensual conclusions.
PO8.	The students will be able to demonstrate compassionate social concern and act with a cognizant awareness of issues to contribute in civic life by volunteering impartially towards national development and thereby deliver effective citizenship.
PO9.	The students will be able to ethically recognize different value systems, understand the moral dimensions of individual decisions and accept responsibility for them.
PO10.	The students will be able to recognize the issues of environmental perspectives and appreciate sustainable development for long term environmental sustainability.
PO11.	The students will be able to engage themselves in life long self determining and learning in the comprehensive background of socio technological changes for continued self directed and life long learning.

Programme Specific Outcomes (PSO)

PSO1.	The students after the completion of this programme will be able to contemplate and comprehend Classical Sociological Tradition. Students would be able to understand sociological phenomena of individuals, socio ethnic structures, socio cultural institutions and socio economic inequality.
PSO2.	The students after the completion of this programme will be able to contemplate and comprehend Philosophical and Conceptual Foundation of Social Research. Students would be able to effectively communicate and draft sociological concepts and theories associated with real life situations.
PSO3.	The students after the completion of this programme will be able to contemplate and comprehend Social Change in India. Students would be able to perform analytical thinking on the basis of survey, census & research of qualitative and quantitative data & information.

PSO4.	The students after the completion of this programme will be able to contemplate and comprehend Rural Sociology. Students would be able to become a thorough professional with social intellec so as to have career opportunities galore social welfare, rural development, public policy, governance, business, social foundations, NGO and academia.
PSO5.	The students after the completion of this programme will be able to contemplate and comprehend Classical Sociological Thinkers.
PSO6.	The students after the completion of this programme will be able to contemplate and comprehend and apply Quantitative Research Techniques in Sociology.
PSO7.	The students after the completion of this programme will be able to contemplate and comprehend Sociology of Development.
PSO8.	The students after the completion of this programme will be able to contemplate and comprehend Indian Rural Society.
PSO9.	The students after the completion of this programme will be able to contemplate and comprehend Classical Sociological Theories.
PSO10.	The students after the completion of this programme will be able to contemplate and comprehend Social Movements in India.
PSO11.	The students after the completion of this programme will be able to contemplate and comprehend Perspectives of Study to Indian Society.
PSO12.	The students after the completion of this programme will be able to contemplate and comprehend Industry and Society in India.
PSO13.	The students after the completion of this programme will be able to contemplate and comprehend Criminology.
PSO14.	The students after the completion of this programme will be able to contemplate and comprehend Modern Sociological Theories.
PSO15.	The students after the completion of this programme will be able to contemplate and comprehend Comparative Sociology.
PSO16.	The students after the completion of this programme will be able to contemplate and comprehend Contemporary Issues in Industry.

Course Outcomes (CO)

Paper Code	Paper Name	Course Outcome
SOC. 101	**INTRODUCTION TO SOCIOLOGY**	ENABLE TO UNDERSTAND THE CONCEPT OF SOCIOLOGY
		ENABLE TO UNDERSTAND THE SIGNIFICANCE OF SOCIETY AND SOCIAL INSTITUTIONS
		UNDERSTAND THE TYPES AND THEORIES OF SOCIAL MOBILITY
		UNDERSTAND TO SOCIAL CHANGE
		ENABLE TO UNDERSTAND THE APPLID SOCIOLOGY & ITS IMPORTANCE
SOC. 102	**CONTEMPORARY INDIAN SOCIETY**	TO GAIN THE CLASSICAL PERSPECTIVE ABOUT THE INDIAN SOCIETY.
		TO ELABORATE ON THE STRUCTURE AND COMPOSITION OF THE INDIAN SOCIETY.
		TO GET INSIGHT OF THE BASIC INSTITUTIONS OF THE INDIAN SOCIETY.
		TO ATTAIN AWARENESS REGARDING THE EXISTING FAMILIAL PROBLEMS.
		TO ELUCIDATE THE PREVAILING SOCIETAL PROBLEMS.
SOC. 103	**SOCIOLOGY OF TRIBAL SOCIETY**	TO ACQUIRE UNDERSTANDING OF THE SOCIOLOGICAL ASPECT OF THE TRIBAL SOCIETY.

		TO DESCRIBE THE CLASSIFICATION OF THE TRIBAL PEOPLE AND THEIR ECONOMY.
		TO COMPREHEND WHAT IS THE SOCIO-CULTURAL PROFILE OF TRIBE.
		TO FAMILIARIZE STUDENTS WITH SOCIAL MOBILITY, VARIOUS TRIBAL MOVEMENTS AND SCHEMES OF TRIBAL DEVELOPMENT.
		TO ACQUAINT STUDENTS ABOUT DIFFERENT TRIBAL PROBLEMS AND TRIBAL COMMUNITIES IN CHHATTISGARH.
SOC. 104	**CRIME AND SOCIETY**	ENABLE TO KNOW THE CONCEPT OF CRIME & ITS TYPES
		ENABLE TO KNOW THE MAJOR SOCIAL PROBLEMS AND CHALLENGES
		AWARENESS OF CONTEMPORARY SOCIAL PROBLEMS IN INDIA
		ENABLE TO KNOW THE CONCEPT OF CORRECTIONS:PERPECTIVES& THEORIES
		UNDERSTANDING OF PRISION REFORM, TREATMENT & REHABILITATION
		TO KNOW THE VARIOUS ORGANIGATIONS OF CORRECTIONALS INSTITUTIONS
SOC. 201	**SOCIOLOGY OF TRIBAL SOCIETY**	TO ACQUIRE UNDERSTANDING OF THE SOCIOLOGICAL ASPECT OF THE TRIBAL SOCIETY.
		TO DESCRIBE THE CLASSIFICATION OF THE TRIBAL PEOPLE AND THEIR ECONOMY.
		TO COMPREHEND WHAT IS THE SOCIO-CULTURAL PROFILE OF TRIBE.
		TO FAMILIARIZE STUDENTS WITH SOCIAL MOBILITY, VARIOUS TRIBAL MOVEMENTS AND SCHEMES OF TRIBAL DEVELOPMENT.
		TO ACQUAINT STUDENTS ABOUT DIFFERENT TRIBAL PROBLEMS AND TRIBAL COMMUNITIES IN CHHATTISGARH.
SOC. 202	**METHODS OF SOCIAL RESEARCH**	STUDENTS WILL BE ABLE TO EXPLAIN THE MAJOIR OBJECTIVES OF RESEARCH
		STUDENTS WILL BE ABLE TO EXPLAIN THE MAJOIR RESEARCHAPPROACHES TO RESEARCH DESIGN
		ENABLE TO KNOW THE TYPES OF RESEARCH
		STUDEDENTS ABLE TO KNOW THE TECHNIQUES OF DATA COLLECTION
		ENABLE TO KNOW THE VARIOUS TECHNIQUESAND METHODS OF STATISTICS
SOC. 203	**CLASSICAL SOCIOLOGICAL TRADITION**	TO DEVELOP AN UNDERSTANDING ABOUT THE HISTORICAL DEVELOPMENT OF SOCIAL THOUGHT.
		TO UNDERSTAND THE THEORIES BY COMTE.
		TO GAIN KNOWLEDGE ABOUT THE THEORIES BY DURKHEIM.
		TO COMPREHEND THE PARETO'S THEORIES.
SOC. 204	**PHILOSOPHICAL& CONCEPTUAL FOUNDATION OF RESEARCH**	STUDENTS WILL BE ABLE TO EXPLAIN THE MAJOR APPROACHES TO RESEARCH DESIGN
		THEY ABLE TO KNOW THE OBJECTCTIVES AND SCIENTIFIC METHODS
		THEY ABLE TO KNOW THE TECHNIQUES OF METHODS OF DATA COLLECTION
		THEY ARE KNOWING ABOUT THE VARIUS TYPES OF RESEARCH
SOC. 301	**SOCIAL CHANGE IN INDIA**	TO DEVELOP AN UNDERSTANDING ABOUT THE HISTORICAL DEVELOPMENT OF SOCIAL THOUGHT.
		TO UNDERSTAND THE THEORIES BY COMTE.
		TO GAIN KNOWLEDGE ABOUT THE THEORIES BY DURKHEIM.

		TO COMPREHEND THE PARETO'S THEORIES.
SOC. 302	PHILOSOPHICAL& CONCEPTUAL FOUNDATION OF RESEARCH	STUDENTS WILL BE ABLE TO EXPLAIN THE MAJOR APPROACHES TO RESEARCH DESIGN
		THEY ABLE TO KNOW THE OBJECTCTIVES AND SCIENTIFIC METHODS
		THEY ABLE TO KNOW THE TECHNIQUES OF METHODS OF DATA COLLECTION
		THEY ARE KNOWING ABOUT THE VARIUS TYPES OF RESEARCH
SOC. 303	SOCIAL CHANGE IN INDIA	GETTING ACQUEINTED THE CONCEPT OF SOCIAL CHANGEIN INDIA
		THEY ABLE TO KNOW THE TRENDS &PROCESS OF MODERN INDIA
		THEY UNDERSTAND TO KNOW THE TRIBAL & RURAL SOCIETY
		THEY UNDERSTAND TO KNOW THE INDUSTRIAL & URBAN SOCIETY
SOC. 304	RURAL SOCIOLOGY & INDIAN RURAL SOCIETY	THEY ARE ABLE TO KNOW THE INDIAN RURAL SOCIAL STRUCTURE
		THEY ARE ABLE TO KNOW DEMOCRATIC DECENTALIZATION OF POWER
		TO UNDERSTAND THE CHANGES IN RURAL SOCIETY WITH REFERENCE TO AGRARIAN REFORM
		THEY ARE ABLE TO UNDERSTAND THE COMMUNITY DEVELOPMENT PROGRAM
SOC. 401	CLASSICAL SOCIOLOGICAL THEORIES & MODERN SOCIOLOGICAL THEORIES	To understand the contribution of Comte, Weber and Durkheim to the theory of Positivism.
		To know the Conflict theory by Marx, Dahrendrof and Coser.
		Te be aware about the contribution of Levistruss, Gardiner and Foucault on Structuralism.
		To comprehend the Social Exchange thoery by Homens, Blau and Levi.
SOC. 402	PERSPECTIVE OF STUDY TO INDIAN SOCIETY &COMPERATIVE SOCIOLOGY	ABLE TO KNOW DISTINKTIVE CHARECTERISTICS OF INDIAN SOCIETY
		UNDERSTAND THE STRUCTURAL FUCTIONALISM PERSPECTIVE
		UNDERSTAND THE MARXISM :CRITISM & PRESENT STATUS
		UNDERSTAND THE SUBLTERN PERSPECTIVE & CIVILIZATION PERSPECTIVE
SOC. 403	INDUSTRY AND SOCIETY IN INDIA	To explain industrial relations and elaborate on educational training and development of manpower.
		To understand contemprary issues relating to Industralization.
		To identiiy Labour welfare schemes and the role of ILO and Trade Unions.
		To explain Industrialization in the third world countries in the era of Globalization.
SOC. 404	CRIMINOLOGY	ENABLE TO KNOW THE THEORIES OF CRIME
		AND CRIMINAL BEHAVIOUR
		UNDERSTAND THE TYPES OF CRIME AND DEVIANT BEHAVIOUR
		ENABLE TO KNOW THE CAUSES, CONSEQUENCES & PREVENTION
		TO DEVELOPTHE KNOWLEDGE OF REFORMATIVE THEORY &PRISON SYSTEM

FACULTY OF HOME SCIENCE

Government D. B. Girls Postgraduate College, Raipur

Programme Outcomes and Course Outcomes

Programme: Diploma in Hospitality Management

PROGRAMME CODE: DHM UNDER THE

PILOT COMMUNITY SCHEME

SCHEME OF PROGRAMM: AT A GLANCE

PROGRAMME OUTCOMES

Diploma in Hospitality Management is launched by UGC under community college scheme. This course deals with hotel management, Resort Management, customer service, accounts Management and Travel/Tour Management. Any Candidate applying for Diploma in Hospitality Management should pass 10+2 level of education from a recognized board or university or Bachelor's degree as per the type of the course being offered.

These students would be strongly able to make up their bright career in different fields such as higher education for teaching & research, civil services, corporate and /or industry / job, entrepreneurship and other private sectors after completion of this program -

PO-1	**Disciplinary knowledge and skills:** Apply the knowledge of Hospitality Management, Culinary Science, Human Resource Management, Communication Skills and Marketing to the solution of Hospitality and Tourism World
PO-2	Identification of problems of Hospitality Industry, Formulation, Research Literature, and analyze complex Hospitality Management problems reaching substantiated conclusions using Principles of Hospitality.
PO-3	**Critical thinking**: Analytical reasoning and Problem solving : Ability to employ critical thinking in identifying the problem, developing analytical skills and capabilities to resolve the problems efficiently related to all the areas
PO-4	**Research and Scientific reasoning**: Skills in undertaking small researches by way of Term paper, Case Studies, Market Surveys, Field visits, Laboratory Experiments etc. on the related topics/ problems of the discipline and arrive at the results based on the scientific reasoning wherever applicable.
PO-5	**Cooperation/ Team Work**: Capability of working enthusiastically and united with the working teams in organizing events in the Department/ Faculty/ University/ Community, and accomplishing group work/ assignments / tasks by willing cooperation of all and well-coordinated group living through during educational visits.
PO-6	**Environment sustainabilty:** Understand the impact of the Hospitality Education
PO-7	**Digital Literacy:** Competency in accessing relevant and authentic information and data from electronic media with a motive to learn and synthesize it on the given topics in Home Science discipline for academic and extension work presentation and to prepare computer aided designs by using the needed software's.

PO-8	**Ethics**: Apply the ethical principles and commit to professional ethics and responsibilities and norms of the Hospitality Management Practices. • Respect of Tourists/Guests and Colleagues that encompasses without prejudice diversity of the background, language in culture
PO-9	**Multicultural competence:** Ability to learn about different cultures by way of practicing traditions, traditional cooking, ethnic designing and stitching, developing itineraries, and making traditional arts.
PO-10	**Effective Citizenship:** Responsible for learning, develop honesty in work and respect for self and others. Function effectively as an individual member or leader in diverse teams and in multidisciplinary settings towards the development of the society or nation

COURSE OUTCOMES

Course Code	Course Name	Course Out Comes
DHM01	Fundamentals of Hospitality Management and Communication skill	I- They will be familiar to basic Meaning of Hospitality, Tradition & History of Hospitality in India.
		II-They will understand the Nature, scope and significance of Hospitality management
		III-Quality of service and skills, introduction to communication skill.
		IV- Develop an ability to communication,
		V-They will be able to learn about communication, Listing skills,Writing skills
DHM02	House Keeping Management	I-It will create awareness among the students about, Scope & Importance of Housekeeping, Types of House Keeping.
		II- To recognize the importance' of wise use of resources in order to achieve goals.
		III-Designing of Flower arrangement
		IV-They will learn about the Handling Guest Laundry
		V-They will learn about the Selection and Design of Uniforms
DHM03	Front Office Management	I-To acquaint with Introduction to front office department
		II-Learn and develop Meaning of reservation, Importance of reservation process
		III-To acquaint with Reservation process, Documenting Reservation details Reservation form
		IV-Front office function
		V-They will be able to understand Front office Reception skills and qualities, Communication skills
DHM04	Food Service Operation and Management	I-To acquaint with The Waiter, styles of Food service
		II-Learn and Types of menu, Purchasing and storage of food,
		III-To acquaint with care of equipment

		IV- Harmful effects of microorganisms, Environmental hygiene and sanitation
		V-They will be able to understand Laws, Brief introduction to Factories act
DHM05	Basic Accounting and Computer Application	I-To be aware of Book Keeping, Purchases Book
		II-they will be able to know about Front office accounting, Billing, E Billing.
		III-Student will Understand the Night Audit, Importance and Role on the Hotel,
		IV- students will understand IT in Hospitality, Computer Fundamentals.
		V-Understand the Internet Applications to Front office
		V-The student will know the basics of computers and will be use computers for education, information and research
		V- To know about the Entrepreneurship and Self-employment.

FACULTY OF HOME SCIENCE

Government D. B. Girls Postgraduate College, Raipur

Programme Outcomes and Course Outcomes

Programme: B.Sc. Home Science (Traditional)/Vocational

PROGRAMME CODE: BSHT/BSHVO

SCHEME OF PROGRAMM :AT A GLANCE

Programme	Course	Core Course	Elective Course
UG (BSH01)	BSH1GB01	Textile And Clothing	Textile science
	BSH1GB02	Community Development	Colour theory and concept
UG(BSH02)	BSH2GB01	Textile And Fibre Science	Introduction to Fashion Illustration and Model
	BSH2GB02	Communication Process	Design Ideas in Garments
UG(BSHO3)	BSH3GB01	Apparel Making and Clothing construction	Marketing & Sales Management
	BSH3GB02	Extension Education	Clothing Construction &Fashion Designing

PROGRAMME OUTCOMES

Home Science is a science-oriented, multidisciplinary subject which encompasses the multifarious activities that occur in families, households, and communities. Over years, the discipline has evolved and expanded to encompass activities and services of relevance, not only to the micro contexts of the family and community, but also to the macro context of the larger society. Home Science is both multidisciplinary and interdisciplinary in its context encompassing the five major disciplines of Family Resource Management, Foods and Nutrition, Textiles and Clothing, Human Development, and Extension and Education. Each discipline has one or more specific areas of specialization.

These students would be strongly able to make up their bright career in different fields such as higher education for teaching & research, civil services, corporate and /or industry / job, entrepreneurship and other private sectors after completion of this program -

PO-1	**Disciplinary knowledge and skills:** Capable in demonstrating basic theoretical and practical knowledge and understanding in subjects like: a) Textiles and Clothing- from Textile Chemistry and Engineering, Fine Arts, Textile designing, Garment production industries, Apparel retailing and merchandizing, Fashion Design, History. b) Extension and Communication- from Social work, Journalism, Mass Communication, Media production and promotion, Theatre, Law, Film Making. c) Food and Nutrition- from Physiology, Biology, Nutrition, Chemistry, Biotechnology, Microbiology, Dietetics, Medicine, Extension.

	d) Resource Management- from Resources, management, Architecture, Consumer, Economics, Commerce, Civil Engineering, Environment, Fine Arts, Design , Social Work, Law, Ergonomics , Physiology, Interior Design. e) Human Development - from Psychology, Sociology, Social Work, Pediatrics, Anthropology.
PO-2	**Effective Communicator**: Ability to communicate precisely, confidently and with clarity among the rural and urban communities using attention seeking media on the various educational topics for creating awareness and making better lives .Competency to express thoughts and ideas through folk media, Social media, print media, PPT's, role plays ,displays and exhibitions along with oral and writing skills.
PO-3	**Critical thinking**:Analytical reasoning and Problem solving : Ability to employ critical thinking in identifying the problem, developing analytical skills and capabilities to resolve the problems efficiently related to all the five specific areas on a tailor made basis for a client, customer, an individual , family and society either independently or with the support of concerned authorities .
PO-4	**Research and Scientific reasoning**: Skills in undertaking small researches by way of Term paper, Case Studies, Market Surveys, Field visits, Laboratory Experiments etc. on the related topics/ problems of the discipline and arrive at the results based on the scientific reasoning wherever applicable.
PO-5	**Cooperation/ Team Work**: Capability of working enthusiastically and united with the working teams in organizing events in the Department/ Faculty/ University/ Community, and accomplishing group work/ assignments / tasks by willing cooperation of all and well-coordinated group living through during educational visits.
PO-6	**Reflective thinking:** Ability to practice empathy and objectivity in dealing with the personal and community interactions and problems.
PO-7	**Digital Literacy:** Competency in accessing relevant and authentic information and data from electronic media with a motive to learn and synthesize it on the given topics in Home Science discipline for academic and extension work presentation and to prepare computer aided designs by using the needed software's.
PO-8	**Self-directive learning**: Potential to complete the assigned projects successfully either at Residential / Commercial level or Community level by managing the resources independently and wisely.
PO-9	**Multicultural competence:** Ability to learn about different cultures by way of practicing traditions, traditional cooking, ethnic designing and stitching, developing itineraries, and making traditional arts.
PO-10	**Effective Citizenship:** Responsible for learning, develop honesty in work and respect for self and others. Function effectively as an individual member or leader in diverse teams and in multidisciplinary settings towards the development of the society or nation

COURSE OUTCOMES

Course Code	Course Name	Course Out Comes
BSH1GA01	Basic Nutrition	I- They will be familiar to basic terminologies used in foods and nutrition.
		II-They will understand the functions of food and the role of various nutrients, their requirements and the effects of deficiency and excess.
		III-They will Learn about the structure, composition, nutritional contribution and selection of different foodstuffs, be familiar with the different methods of cooking, their advantages and disadvantages and they will develop an ability to improve the nutritional-quality of food up to 1st year.
		IV- Develop an ability to improve the nutritional-quality of food.
		V-They will be able to learn about how to improve the quality of food
		They will learn to measure the raw and cooked food, they will prepare foods as per recipe
BSH1GA02	Introduction to Resource Management	I-It will create awareness among the students about, management in the family as well as the other systems.
		II- To recognize the importance' of wise use of resources in order to achieve goals.
		III-The physical environment and its components and the major issues
		IV-They will learn about the impact of human, activities on environment
		V-They will learn about the action needed for checking environmental threats
BSH1GB01(A)	Textile And Clothing	I-To acquaint with proper notion regarding choice of fabrics
		II-Learn and develop skills in clothing construction
		III-To acquaint with different textiles and their performances
		IV-they will Impart knowledge on different textiles finishes
		V-They will be able to understand all about printing
BSH1GB01(B)	Textile Science	I-To acquaint with proper notion regarding choice of fabrics
		II-Learn and develop skills in clothing construction
		III-To acquaint with different textiles and their performances
		IV-they will Impart knowledge on different textiles finishes
		V-They will be able to understand all about printing
BSH1GB02(A)		I-To be aware of the approaches to development

	Community Development	II-Develop faith in the capacity of the people, to take responsibility for their own development.
		III-Student will Understand the existing support structures for development efforts.
		IV-Students will Understand the role of non Govt organizations in community development.
		V-Understand the socio - economic structures and systems that make up the rural and urban communities.
BSH1GB02(B)	Colour theory and concept	I - To develop skill and knowledge Element of Design, Principles of Design and Colour theories.
		II – Know about Colour wheel and Different design.
		III – To know and Colour Schemes.
		IV – To know the different prints.
		V – To know about the different types of texture and print enlargement.
BSH1GC01	Introduction To Human Development	I-This is an attempt to guide under graduate human development in a basic way.
		II-They will learn about the physical and motor development
		III-Acquire knowledge and in insights about the dynamics of contemporary marriage and family system of India.
		IV- They will be able to understand basic of cognitive development
		V-Socio-emotional Development Across the Life Span
BSH1GC02	Personal Empowerment & Computer Basic	I-Student will learn about Personal Growth and Personality Development
		II-The student will aware of the role of empowerment of women from the perspectives of personal and national development;
		III-Learn the relattion of Home Science Education as Empowerment
		IV-Some Significant Contemporary Issues of Concern-gender,
		V-The student will know the basics of computers and will be use computers for education, information and research
BSH2GA01	Clinical Nutrition and Dietetics	I-They will learn about basics of Health & Nutrition
		II-The student will Understand the concept of an adequate diet and the importance of meal planning
		III-They will learn principles of diet therapy
		IV-They will learn about etiology, symptoms about few diseases
		V-Gain knowledge about dietary management in NCD
BSH2GA02	Human Physiology and	I-The student will understand the basics of physiology

	Community Nutrition	II-Students will able to understand about the structure and functions of digestive and nervous system
		III-Student will able to understand the excretory and respiratory system and their functions,
		IV-Student will able to understand thereproductive system
		V-Learn about basics of community nutrition their functions
BSH2GB01(A)	Textile and Fibre Science	I-Students will able to understand about the basic of laundry, textiles, fibres
		II-Learn about starches, blue, bleeches etc
		III-Students will be able to understand about dry cleaning
		IV- Students will understand the clothing construction,
		V- Student will learn about basics of tailoring
BSH2GB01(B)	Introduction to Fashion Illustration & Model	I – To know about the Fashion theories, trends and fashion industry.
		II – To know the Anatomy of human body , Figure problems and deformity
		III – Principle of figure drawing and sketching body figures.
		IV- To know about Figure Head Theories. Drawing of human form in different angles.
		V- To know about the Silhouettes, Rendering of figures in different postures and sketching styles
BSH2GB02(A)	Communication Process	I-The students will able to understand the concept of development communication process
		II-The students will understand the meaning of communication
		III-The students will understand the methos of communication
		IV-Learn about role play, poster, film
		V-They will learn skill to use the media
BSH2GB02(B)	Design Ideas in Garments	I – To know about the Body measurements and Pattern making.
		II – To know the Basic paper pattern, layouts and cloth estimation for Different garments.
		III – To know about the different types of Collars and Necklines.
		IV- To know about the Tucks, pleats, Seams and gathers.
		V- To know about the Yolk and sleeves.
BSH2GC01	Life Span Development	I-Learn the need of study life span development
		II-Learn all about adolescence
		III-Learn all about adulthood

		IV-Learn about infancy
		V-Learn about creativity
BSH2GC02	Consumer Economics	I-Learn basic of consumption economics
		II-They will able to understand the Consumer income
		I- The student will able to understand all about market
		IV-Learn about protection services
		V-They will understand consumer decision making
BSH3GA01	Nutritional Biochemistry	I-Student will understand the basics of biochemistry
		II-students will able to understand the basic of lipid
		III-students will able to understand the basic of proteins
		IV-students will able to understand the basic of Hormones
		V-Students will able to understand the corelation of biochemistry with energy.
BSH3GA02	Food Preservation	I-They will understand the basic behind the food preservation
		II-Learn about fresh food storage
		III-Learn all about pasteurization
		IV-Students will learn about the methods of food preservation
		V-Students will learn the methods of food preservations
BSH3GB01(A)	Apparel Making & Clothing Construction	I-The student will learn to make pattern
		II-they will understand about the basic of principle of design
		III-They will learn about fashion
		IV-They will learn the principles of fullness
		V-Learn about Fundamentals of Embroidery
BSH3GB01(B)	Marketing and Sales Management	I – To know about the Marketing, Standardization & Grading, Product life cycle.
		II – To know the Pricing policies, Sales promot in and salesmanship
		III – To know about the different types of Collars and Necklines.
		IV- To know about the Channels of distribution, Advertisement and
		V- To know about the Entrepreneurship and Self-employment.
BSH3GB02(A)	Extension Education	I-They will understand the basics of extension education
		II-They will learn the basics of adult education
		III-They will learn to use various techniques of food production
		IV-Learn about programmes related to women and child
		V-They will learn how to prepare docs for Advertisement

BSH3GB02(B)	Clothing construction & fashion designing	I – To know about the clothing, personality and costumes of Ancient & Modern age.
		II – To know the Garment making, Industrial machine and fitting.
		III – To know about the Principles of General & Commercial tailoring, Pattern making, pattern alteration & dart manipulation.
		IV- To know about the Drafting & draping, trimming materials,Ornamentation techniques and traditional embroidery
		V- To know about the Different states' costumes, jewelry & accessories for man & women, marriage and dance costumes.
BSH3GC01	Early Childhood Education	I-To know importance of early childhood care and significance of intervention programmes to early child development
		II-Learn about scope of ECE to ECCE
		III--Meaning of curriculum, Foundation of. curriculum development.
		IV--Goals of language teaching
		V-Learn about project design
BSH3GC02	Foundation of Art and Design	I-Student will able to understand the principles of designs and elements of arts
		II-Indian, regional, traditional and contemporary arts and their use
		III-Family housing needs
		IV-Financial Considerations
		V-Learn all about furniture

Name of department: Commerce

Part I: Course Outcome

Name of Programme	Course/Paper	Name of course/Paper	Course outcome (should include one point for each . of the paper)
B.COM(COMPUTER APPLICATION)	**SEMESTER I**	Paper I Fundamentals of Computers & Office Automation	1. Understand the meaning and basic components of a computer system. 2. Discuss the advantages, limitations and applications of computers. 3. Identify the various inputs and output units and explain their purposes. 4. Essential for a modern office for day to day office management. 5. Learn about text formatting and editing using MS Word. 6. Learn How to do effective presentation using MS Power Point
	SEMESTER II	Paper I Computer Software, Office Automation and Tally	1. Gain knowledge of Systems software and Application software. 2. Understand the primary functions of an Operating System. 3. Use of Utility programs. 4. Understand how to calculation will be done with MS Excel. 5.Learn how to apply various mathematical functions and formatting options in MS Exce

Part II: Programme outcome

Name of programme/degree

B.COM(COMPUTER APPLICATION)

1) Students will gain fundamental knowledge about computer softwares and hardwares.
2) Students will acquire firm knowledge regarding operating system, system softwares and application softwares.
3) Helps to develop the practical knowledge of students regarding Tally, programming languages like HTML, Visual basics, etc. .
4)Students will be capable to do accounting works with the help of Tally and MS-Office.

Part III: Programme Specific outcome

Name of programme/degree

B.COM(COMPUTER APPLICATION)

PSO1 Students can work ı
PSO2 In the future, student could also go for a master's degree to specialize in either one of the fields of your choice.
PSO3 The job opportunities are great, the salary packages offered are decent and most of the colleges have placements to reputed companies offering attractive packages
PSO4 It gives you an edge over computer graduates as student have the knowledge in commerce also, which makes student a desirable candidate for IT employers.

Name of department: Commerce

Part I: Course Outcome

Name of Programme	Course/Paper	Name of course/Paper	Course outcome (should include one point for each . of the paper)
B.COM(COMPUTER APPLICATION)	**SEMESTER I**	Paper I Fundamentals of Computers & Office Automation	1. Understand the meaning and basic components of a computer system. 2. Discuss the advantages, limitations and applications of computers. 3. Identify the various inputs and output units and explain their purposes. 4. Essential for a modern office for day to day office management. 5. Learn about text formatting and editing using MS Word. 6. Learn How to do effective presentation using MS Power Point
	SEMESTER II	Paper I Computer Software, Office Automation and Tally	1. Gain knowledge of Systems software and Application software. 2. Understand the primary functions of an Operating System. 3. Use of Utility programs. 4. Understand how to calculation will be done with MS Excel. 5.Learn how to apply various mathematical functions and formatting options in MS Exce

Part II: Programme outcome

Name of programme/degree

B.COM(COMPUTER APPLICATION)

1) Students will gain fundamental knowledge about computer softwares and hardwares.
2) Students will acquire firm knowledge regarding operating system, system softwares and application softwares.
3) Helps to develop the practical knowledge of students regarding Tally, programming languages like HTML, Visual basics, etc. .
4)Students will be capable to do accounting works with the help of Tally and MS-Office.

Part III: Programme Specific outcome

Name of programme/degree

B.COM(COMPUTER APPLICATION)

PSO1 Students can work ı
PSO2 In the future, student could also go for a master's degree to specialize in either one of the fields of your choice.
PSO3 The job opportunities are great, the salary packages offered are decent and most of the colleges have placements to reputed companies offering attractive packages
PSO4 It gives you an edge over computer graduates as student have the knowledge in commerce also, which makes student a desirable candidate for IT employers.

Name of department: **Commerce**

Part I: Course outcome

Name of Programme	Course/Paper	Name of course/Paper	Course outcome (should include one point for each . of the paper)
B.Com I	**SEMESTER**	Paper I-Fianancial Accounting	I- Apply the generally accepted accounting principles while recording transactions and preparing financial statements
			II . Demonstrate accounting process under computerized accounting system;
			III- Measure business income applying relevant accounting standards;
			IV- Prepare cash book and other accounts necessary while running a business
			V- . Prepare accounts for inland branches and not-for-profit organisations.
		Paper II-Buisness Law	. I- .Examine various aspects of entering into a contract and implications of different types of contract;
			. II- . Interpret the regulation governing the Contract of Sale of Goods;
			. III-. Discuss the laws governing partnership and legal consequences of their transactions and other actions in relation with the partnership, and examine contractual obligations and provisions governing limited liability partnership
			. IV - Describe the significant provisions of the Competition Act to prevent practices having adverse effect on competition and provisions of the Consumer Protection Act to protect the interest of the consumers;
		Paper-III Buisness STATISTICS	. I- Apply a basic knowledge of statistics to business disciplines;
			. II- . Develop the ability to analyze and interpret data to provide meaningful information to assist in management decision making activities;
			. III- Apply appropriate graphical and numerical descriptive statistics for different types of data;
			. IV-. Apply probability rules and concepts relating to discrete and continuous random variables to answer questions within a business context;
			. V- Explain and interpret a variety of hypothesis tests to aid decision making in a business context;

			VI - Use simple/multiple regression models to analyze the underlying relationships between the variables
B.COM II	**SEMESTER**	Paper I- CORPORATE ACCOUNTING	. I- Describe the rationale, merits, and demerits of issuing bonus shares for a company;
			. II- Prepare financial statements (Profit & Loss Account, Balance Sheet, etc.) using online software;
			. III- Prepare balance sheet after Internal Reconstruction of company;
			. IV-Analyse the case study of major amalgamations of companies in India;
			. V- Describe the process of e-filing of annual reports of companies
		Paper-II CORPORATE LAW	. I- Explain relevant definitions and provisions relating to issue of prospectus and allotment of shares;
			. II- Synthesize company processes, meetings, and decisions;
			. III- Describe the framework of dividend distribution, Accounts of the company and Audit and Auditors of company;
			. IV Determine the role of Board of directors and their legal position;
			. V- State regulatory aspects involved in Oppression, Mismanagement, corporate restructuring and Winding Up.
		Paper III- BUSINESS ORGANISATION AND MANAGEMENT	. I- . Distinguish and explain each form of business.
			. II- Prepare draft of Article of Association & Memorandum of Association for a business;
			. III-Explain principles and functions of management implemented in the organisation
			. IV-Identify and explain the managerial skills used in business;
B.Com II			. V-Analyse the concept of Delegation of Authority, coordination.
	Group I - Accounting	Paper I- Corporate accounting	. I - Knowledge about the share and debenture affairs of company.

		. II - Knowlegdge about the final accounts and liqidation of company.
		. III - Learning about valuvation of goodwill and share.
		. IV - Knowledge about the amalgamation and recontruction of company.
		. V- Knowledge about the holding and subsidiary company affairs and banking company transaction.
	Paper II- Cost accounting	. I - Basic knowledge about the costing, cost and material control.
		. II - Knowledge about accounting for labour and overheads.
		. III - Knowlegde about ., job, batch and contract costing.
		. IV - Knowlegde about operating costing and process costing.
		.-V Knowlegde about cost records and break even analysis
Group II - Business management	Paper I - Principle of business management	. I - Knowlegde about the all concept of management and tools of management.
		. II - Learning about planning and decision making.
		. III- Learning about organization and orgainzing structure
		. IV - learning about motivation, leadership and communication qualities.
		. V- knowlegde about managerial control and management of change.
	Paper II - Company law	. I - Knowlegde about companies Act 1956
		. II - Knowlegde about main document of comapany like MOA,AOA act.
		. III - learing about capital management of comapany and role of directors.

			. IV - Knowlegde about company meetings.
			. V- Knowlegde about minority rights and majority powers of companies member
	Group III - Applied Economics	Paper I - Business statisitics	. I - Basic knowledge about statistics, univariate of data, frequency distribution and cocept of central tendency.
			. II - Knowledge about tools of depersion.
			. III - Knowledge about linear regression and correlation.
			. IV - Knowledge about index number.
			. V- Learning about forecasting and law of probebility.
		Paper II - Fundamentals of enterpreneurship	. I - Knowledge about theories of enterpreneurship.
			. II - Learning about pramotion of venture.
			. III - Learing about enterpreneurial behavior.
			. IV - Knowledge about enterpreneurial development programs.
B.Com III			. V- Knowledge about role of enterpreneur.
	Compulsory core course	Paper I- Income Tax	. I - Knowledge about the Basic concepts of Income Tax and Agricultural Income.
			. II - Knowledge about Income From Salary and House Property.
			. III - Knowledge about Income from Business or Profession;Capital Gain and Other Sources.
			. IV - Knowledge about the Calculation of Total Income and Tax Liability.
			. V- Knowledge of Tax Planning and Tax Administration.

	Paper II- Indirect Tax	. I - Knowledge of Central Excise and its Calculation
		. II - Knowledge about State Excise Duty
		. III - Knowledge about Custom Duty
		. IV - Knowledge of Central Sales Tax
		.-V Knowledge of Chattisgarh Commercial Tax
	Paper III- Management Accounting	. I - Basic knowlegde about Management Accounting and Ratio Analysis
		. II - Learning about Fund and Cash Flows
		. III- Knowledge of Marginal Cost
		. IV - Knowledge about Budgetry Control and Flexible Budget
		. V- knowlegde about Standard Costing
	Paper IV - Auditing	. I - Basic knowlegde about Auditing.
		. II - Knowlegde of Internal Checking and Control.
		. III - Knowledge Regarding Audit of different Limited Companies
		. IV - Knowlegde of Investigation
		. V- Knowlegde of Recent Trends in Auditing and Auditor.
Optional Group (B) Marketing Area	Paper I - Principles of Marketing	. I -Knowledge of Basic Marketing Concept
		. II - Knowledge of Consumer Behaviour and Market Segmentation.

		. III - Knowledge about the concept of Product
		. IV - Knowledge of Distribution Concept
		. V- Learning of the concept of Promotion.
	Paper II - International Marketing	. I - Basic knowledge of International Marketing
		. II - Knowledge about Foreign Market
		. III - Knowledge about Promotion of Product/Services Abroad
		. IV - Knowledge of International Distribution
M.Com I Semester		. V- Knowledge of Export-Import Policy
	Paper I-Managerial Economics	. I- To Learn basic Concept Of Managerial Economics
		. II- Knowledge about Demand Analysis.
		. III- Knowledge about Theory Of Consumer Choice.
		. IV- Knowledge about Prouction Theory and Stages of Production.
	Paper II-Advanced Accounting	. I- Knowledge about Issue ,Forfetied and Redemption of Shares.
		. II- Knowledge about Issue and Redemption of Debentures.
		. III- Knowledge about Amalagamation and Reconstruction Of Companies.
		. IV-Knowledge about Accounting of Holding and Subsidiary Campanies.
	Paper-III Management Accounting	. I- Knowledge about basic Concepts Of Management Accounting

	. II- Knowledge about Accounting Plan and Responsibility Centres.
	. III- Knowledge about Budgeting and Marginal Costing.
	. IV-Knowledge about Standard costing and Variance Analysis.
Paper IV-Statistical Analysis	. I- Knowledge about basic Rules and Functions of Statistics.
	. II- Knowledge about Data Sources and Corelation.
	. III- Knowledge about Probability Theory.
	. IV-Knowledge about Probability Distributions.
Paper-V Corporate Legal Framework	. I- Knowledge about Companies Act and Important Documents.
	. II- Knowledge about Share capital,Meetings and Winding Up of Companies.
	. III- Knowledge about Negotiable Instruments.
	. IV-Knowledge about Endorsement and crossing of Cheque, SEBI Act.
Paper I-Business Economics	. I- Knowledge about Cost Theory and Estimation.
	. II- Knowledge about Price Determination under Different Market Conditions.
	. III- Knowledge about Pricing Practices.
	. IV- Knowledge about Business Cycles and Inflation.
Paper II-Specialized Accounting	. I- Knowledge about Accounts Of General Insurance Companies.
	. II- Knowledge about Accounts Of Banking Companies.

M.Com II Semester

		. III- Knowledge about Accounts Of Public Utility Concerns.
		. IV-Knowledge about Royalty Accounts .
	Paper-III Accounting for Managerial Decisions	. I- Knowledge about Break Even Analysis.
		. II- Knowledge about Analyzing Fianancial Statements.
		. III- Knowledge about Contemporary Issues in Management Accounting.
		. IV-Knowledge about Reporting to Management.
	Paper IV-Advanced Statistics	. I- Knowledge about Statistical Decision Theory.
		. II- Knowledge about Statistical Estimations and Test Theory
		. III- Knowledge about Association Of Attributes.
		. IV-Knowledge about Statistical Quality Control.
	Paper-V Buisness Law	. I- Knowledge about SEBI Act 1992.
		. II- Knowledge about Competition Act 2002.
		. III- Knowledge about Consumer Protection Act 1986
M.Com III Semester		. IV-Knowledge about WTO, TRIP,TRIMS and GATS.
	Paper I-Management Concept	. I- Knowledge about Schoos of Management.
		. II- Knowledge about Managerial Funtions.
		. III- Knowledge Process and Theories of Motivation.

	. IV- Knowledge about Group Dynamics and Team Development.
Paper II-Organizational Behaviour	. I- Knowledge about basic Concept of Organizatioal Behaviour.
	. II- Knowledge about Concept ,Theories, Styles of Leadership and Organizational Conflict.
	. III- Knowledge about Interpersonal and Organizational Communications..
	. IV-Knowledge about Organizational Development.
Paper-III Advanced Cost Accounting	. I- Knowledge about Cost Analysis,Material and Labour Control.
	. II- Knowledge about Job ,Batch ,Contract and Operating Costing.
	. III- Knowledge about Process Costing ,Estimate Costing and Uniform Costing.
	. IV-Knowledge about concept of varioius report udgetary Control.
Paper IV-Income Tax Law and Accounts	. I- Knowledge about basic Law Relating to Income Tax.
	. II- Knowledge about Calculation Of Taxable Income under the Head Salary and House Property.
	. III- Knowledge about Calculation Of Taxable Income under the Head Business, Profession,Capital Gain and Other sources.
	. IV-Knowledge about Set off and carry Forward of losses , Appeals and Revisions.
Paper-V Tax Planning and Management	. I- Knowledge about Calculation Of Taxable Income and Tax of Firms and Companies.
	. II- Knowledge about basic Concepts of Return of Income, Reopening of Assessment.
	. III- Knowledge about concept Of Tax Planning.
M.Com IV Semester	. IV-Knowledge about Preparation of Income Tax Returns.

Paper I-Financial Management	. I- Knowledge about Financial Management and Capital Budgting.
	. II- Knowledge about Cost of capital , Operating and Financial Leverage.
	. III- Knowledge about Capital Structure Theories and Dividend Policies.
	. IV- Knowledge about Management of Working Capital and Management of Cash.
Paper II-Personnel Management	. I- Knowledge about basic Concept of Personnel Management.
	. II- Knowledge about Personnel Policies.
	. III- Knowledge about Man Power Planning.
	. IV-Knowledge about Performance Appraisal and Employees Fringe Benefits.
Paper III-Production Management	. I- Knowledge about Fundamentals of Production Management.
	. II- Knowledge about Production Planning and Process Design.
	. III- Knowledge about Work Measurement and Work Standards.
	. IV-Knowledge about Production Control.
Paper IV-Startegic Management	. I- Knowledge about Concept of Strategy.
	. II- Knowledge about Strategy Formulation and Choice Of Alternatives.
	. III- Knowledge about Functional Strategies and Strategy Implementation.
	. IV-Knowledge about Strategy and Structure.
Paper I- Banking Practices	. I- Knowledge about Bank And Its Functions

	. II- Knowledge about Accounts of Customers.
	. III- Knowledge about Employment of Bank Funds.
	. IV- Knowledge about Securities for Advances.
Paper II- Banking Institutes in india	. I- Knowledge about Indian Banking System.
	. II- Knowledge about Development of Banking in India.
	. III- Knowledge about R.B.I.
	. IV- Knowledge about Emerging Trends in Banking Sector.
Paper III- Life Insurance	. I- Knowledge about Life Insurance.
	. II- Knowledge about Life Insurance Policy.
	. III- Knowledge about Premium and Annuity,.
	. IV- Knowledge about Life Insurance Agent And His Working.
Paper IV- General Insurance	. I- Knowledge about Origin and Development of Insurance.
	. II- Knowledge about Classification and Re- insurance.
	. III- Knowledge about Marine Insurance.
	. IV- Knowledge about Fire Insurance.
Paper-V Project	Knowledge about Research Methadology.

Progra

programme/degr ee

B.Com

1) Students will gain fundamental knowledge of Commerce and Business.

2) Students will acquire firm grip in communication and behavioural skills, accounting and management skills,out of box thought process and overall personality development.

3)This programme develops the quality of entrepreneurship among students and prepares them for starting up their own business.

4)Students will be capable to face the modern-day challenges in commerce and business.

5) This program enhances the capabilty of students to take part in different professional exam like CA,CS,ICWA and other courses.

M.Com

1) This programme imparts students to gain in-depth knowledge and understanding of Commerce.

2)Students will get an opport.y to pursue research in their chosen area.

3)This programme will train the students to develop decision making skills, problem solving skills,leadership skills and entrepreneurial skills.

4)Students will be eligible for applying in exams like NET,SET etc for teaching in colleges.

5)Students will generate innovative business ideas and learn to face challenges that can be arise from business environment.

Ph.D.

1)Candidates will get deeper knowledge and mastery of the subject chosen for specialisation.

2)Candidates will get an insight of academic study through coursework and will get field exposure as well.

3)This programme prepares students for doing independent research and to become good academicians.

4)Students can make their contributions in their chosen field of study through original research.

5)Students will learn about various statistical tools and data analysis skills required for research project.

Part III: Programme Specific outcome

Name of programme/degree

B.Com

PSO1	Students can venture into Accounting Fields, Banking Sector,Insurance Sector.
PSO2	Students can move in professional Courses like CA,CS,CMA.
PSO3	Students Can start their own Business.
PSO4	Students can give Examination like UPSC,CGPSC,SSC.
PSO5	Students Will Also Eligible for all certificate courses in banking ,Stock market,Income Tax.
PSO6	Students grasp practical and theoretical knowledge the syllabus covers various fields of commerce and accountancy .
PSO7	Students Will acquire knowledge and practical skill to work as accountant,auditorand tax consultant.

M.Com

PSO1	To enhance the horizon of knowledge of business and the techniques of managing the business with special focus on marketing,insurance and banking theory law and practices.
PSO2	To inculate the knowledge of basic accounting principles and the latest application oriented corporate accounting method.

	To acquire and develop the decision making skills through costing methods and practicals application of management accounting principles.
PSO3	To gain the knowledge in various field of commerce through advertising and sales promotion auditing and enterpreneurial development.
PSO4	To get the knowledge of innovations in international market .
PSO5	

Ph.D.

	The students should learn to apply the knowledge of statistics and management to the solution of multifaceted problems.
PSO1	The PhD Students would gain a knowledge of various avenues for conducting research in the field of commerce and management.
PSO2	The commerce and finance pedagogy offers a number of specialization and practical exposures that would equip the scholars to face the contemparary challenges.
PSO3	The Comprehensive outlook of the course offers value based and job oriented courses that ensures that students are trained in commerce.
PSO4	The students should create select and apply appopriate techniques ,resourses and modern software tools including forcasting and modeling to composite activities to complete the research topic selected.
PSO5	

Govt. D.B. Girls (Autonomous) P.G. College, Raipur (C.G.)

Programme Outcome

Department of Physical Education & Sports

Year 2022-23

Name of Programme	Course/Paper	Name of course/Paper	Course outcome (should include one point for each unit of the paper)
B.P.Ed. I semester	Paper I	History, principles and foundation of physical education	Understand the History, principles and foundation of physical education
	Paper II	Anatomy and physiology	Understand the human body and its structure and functions
	Paper III	Health education and Environment studies	Understand the health problems and their sources
	Paper IV	Officiating and Coaching	Understand the duties of officials and coaches and their qualities
	Practical -1	Track and field (running events)	Understand the skills, rules and their interpritation
	Practical -2	Swimming / Gymnastics / Shooting	Understand the skills, rules and their interpritation
	Practical -3	Indigenous sports: Kabaddi / Malkhambh / lezim / March past	Understand the skills, rules and their interpritation
	Practical -4	Mass demonstration Activities: Kho-Kho / dumbbells / tipri / wands / hoop/ umbrella	Understand the skills, rules and their interpritation

Govt. D.B. Girls (Autonomous) P.G. College, Raipur (C.G.)

Programme Outcome

Department of Physical Education & Sports

Year 2022-23

Name of Programme	Course/Paper	Name of course/Paper	Course outcome (should include one point for each unit of the paper)
B.P.Ed. II semester	Paper I	Yoga education	Understand the yoga, importance and their uses our daily life and sports
	Paper II	Educational technology and methods of teaching in P.E.	Understand the teaching technique, aids and methods
	Paper III	Organization and Administration in Phy. Edu.	Understand the concept of organization and administration in sports and phy. Edu.
	Paper IV	Sports Nutrition and weight management	Understand the basic nutrition and sports nutrition and planning of weight management
	Practical -1	Track and field (jumping events)	Understand the skills, rules and their interpritation
	Practical -2	Yoga / aerobics / Swimming / Gymnastics (any one)	Understand the skills, rules and their interpritation
	Practical -3	Rracket sports: Badminton/ Table tennis/ Squash/ Tennis	Understand the skills, rules and their interpritation
	Practical -4	Teaching practice (classroom and outdoor)	Learn and develop to teaching skills and techniques

Govt. D.B. Girls (Autonomous) P.G. College, Raipur (C.G.)

Programme Outcome

Department of Physical Education & Sports

Year 2022-23

Name of Programme	Course/Paper	Name of course/Paper	Course outcome (should include one point for each unit of the paper)
B.P.Ed. III semester	Paper I	Sports Training	Understand the training components, process and planning in sports
	Paper II	Computer application in Phy. Edu.	Understand the computer and uses application (MS office)
	Paper III	Sports psychology and sociology	Understand the sports psychology and sociology in different games or areas
	Paper IV	Sports medicine, physiotherapy and rehanlitation	Understand the how to use different type of medicines and therapies in sports
	Practical -1	Track and field (throwing events)	Understand the skills, rules and their interpritation
	Practical -2	Combative sports: Martial art, Karate, Judo, Fencing, Boxing, Taekwondo, Wrestling (any two)	Understand the skills, rules and their interpritation
	Practical -3	Team game: Baseball, Cricket, football, Hockey, softball, Volleyball, Handball, Basketball, Netball (any two)	Understand the skills, rules and their interpritation
	Practical -4	Teaching practice (teaching lesson plans for Racket game/ team game/ indigenous game)	Learn and develop to teaching skills and techniques

Govt. D.B. Girls (Autonomous) P.G. College, Raipur (C.G.)

Programme Outcome

Department of Physical Education & Sports

Year 2022-23

Name of Programme	Course/Paper	Name of course/Paper	Course outcome (should include one point for each unit of the paper)
B.P.Ed. IV semester	Paper I	Measurment and Evaluation in Phy. Edu.	Understand the Measurment and Evaluation of physical fitness and sports skills
	Paper II	Kinsiology and Biomechanics	Understand the Mechanical concept, kinematics and kinetics of human movements
	Paper III	Research and Statistics in Phy. Edu.	Understand the Research proccess, Statistics and basics of statistical analysis
	Paper IV	Sports management	Understand the concept, leadership qualities of sports management and sports management in school,
	Practical -1	Track and field/ Swimming/ Gymnstics (any one)	Understand the skills, rules and their interpritation
	Practical -2	Kabaddi, Kho-Kho, Baseball, Cricket, Football, Hockey, softball, Volleyball, Handball, Basketball, Netball, Badminton, Table tennis, Squash, Tennis (any one)	Understand the skills, rules and their interpritation
	Practical -3	Sports specialization: coaching lesson plan Track and field/ Swimming/ Gymnastics (any one)	Learn and develop to teaching skills and techniques
	Practical -4	Sports specialization: coaching lesson plan Kabaddi, Kho-Kho, Baseball, Cricket, Football, Hockey, softball, Volleyball, Handball, Basketball, Netball, Badminton, Table tennis, Squash, Tennis (any one)	Learn and develop to teaching skills and techniques

Govt. D.B. Girls (Autonomous) P.G. College, Raipur (C.G.)

Programme Outcome

Department of Physical Education & Sports

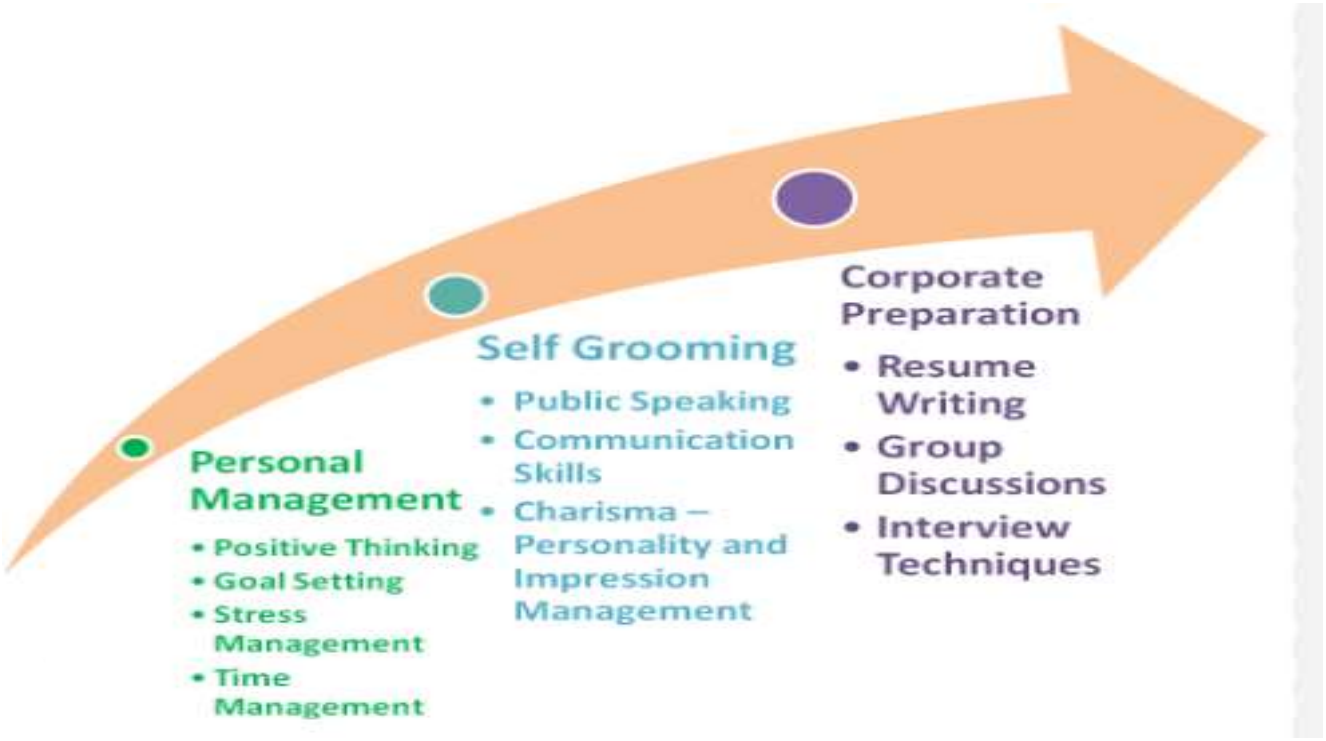
Year 2022-23

Name of Programme	Course/Paper	Name of course/Paper	Course outcome (should include one point for each unit of the paper)
PG DIPLOMA IN YOGA SEM. 1	Paper I	Theoritical Yoga Vijnan	Understand the yoga importance and their uses of our daily life
	Paper II	Applied Yoga Vijnan	Understant the health, life pattern of yoga, human body, mind and yogic management
	Practical - 1	Practice teaching (Indoor) Asanas, Kriyas, Pranayamas, Class arrangement, Meditation	Learn and develop to teaching skills, steps of yoga and their benefits
	Practical - 2	Pawanmuktasana part-1,2&3 Asanas, Nadishodhan and Pranayamas, Mudra, Bandha, Shawaasana	Learn and develop to given yoga activities
PG DIPLOMA IN YOGA SEM. 2	Paper I	Yoga Philosophy	Understand the yoga philosophy, yoga sutra, kinds of yoga and psychomatric disorderand its yogic management
	Paper II	Hatha Yoga	Gain the knowladge of ancient yogic text with scientific explaination of yoga
	Practical - 1	Practice teaching (Indoor) Asanas, Kriyas, Pranayamas, Class arrangement, Meditation	Learn and develop to teaching skills, steps of yoga and their benefits
	Practical - 2	Balancing asanas, Asanas of higher group, Surya namaskar, Pranayama, Bandha, Mudra, Shatkarma, Dhyana & Yoganidra	Learn and develop to given yoga activities

GOVT DB GIRLS' PG COLLEGE, RAIPUR CG

VALUE ADDED COURSE

PERSONALITY DEVELOPMENT



BY

DEPARTMENT OF PSYCHOLOGY

GOVT DB GIRLS' PG COLLEGE, RAIPUR CG

VALUE ADDED COURSE

WOMEN EMPOWERMENT

BY

DEPARTMENT OF SOCIOLOGY

GOVT DB GIRLS' PG COLLEGE, RAIPUR CG

VALUE ADDED COURSE

BHARAT KE LOK NRITYA

BY

DEPARTMENT OF KAYHAK NRITYA

GOVT DB GIRLS' PG COLLEGE, RAIPUR CG

VALUE ADDED COURSE

ENGLISH COMMUNICATION SKILL

BY

DEPARTMENT OF ENGLISH

GOVT DB GIRLS' PG COLLEGE, RAIPUR CG

VALUE ADDED COURSE

DIGITAL CARTOGRAPHY

BY

DEPARTMENT OF GEOGRAPHY

GOVT DB GIRLS' PG COLLEGE, RAIPUR CG

VALUE ADDED COURSE

CULTIVATION AND HERBAL PREPARATION OF LOCAL MEDICINAL AND AROMATIC PLANTS

BY
DEPARTMENT OF BOTANY

GOVT DB GIRLS' PG COLLEGE, RAIPUR CG

VALUE ADDED COURSE

MS OFFICE APPLICATION

BY

DEPARTMENT OF MATHEMATICS & PHYSICS

GOVT DB GIRLS' PG COLLEGE, RAIPUR CG

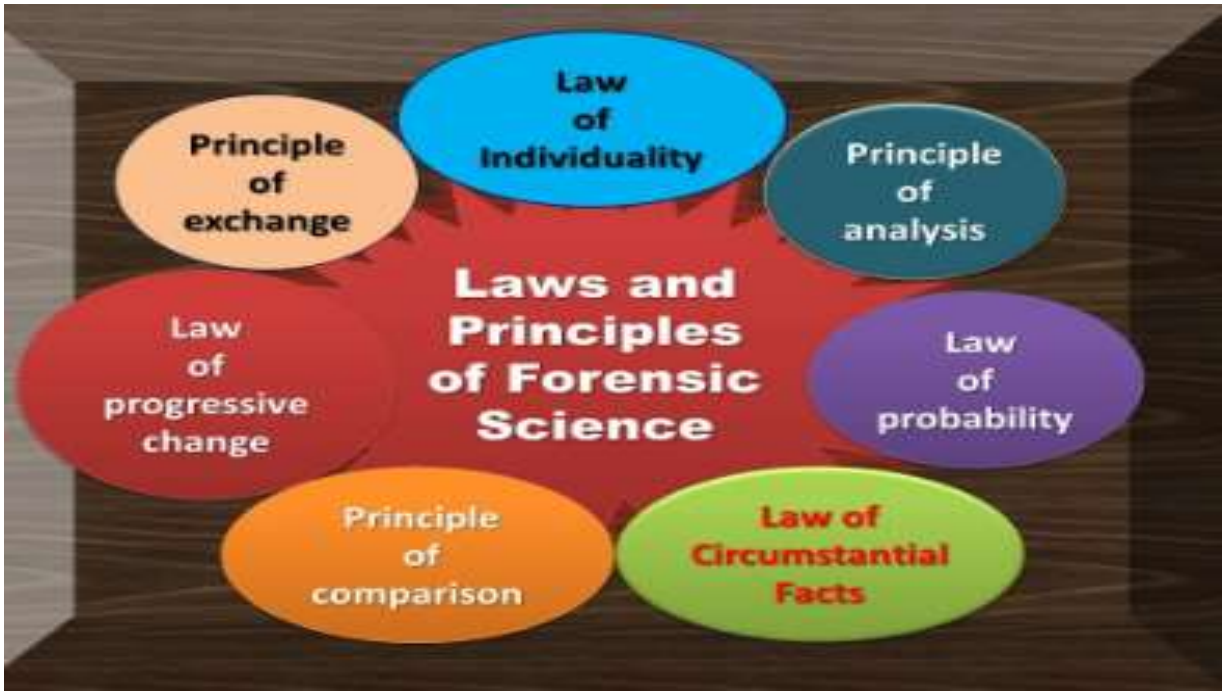
VALUE ADDED COURSE

AQUACULTURE

BY
DEPARTMENT OF ZOOLOGY

GOVT DB GIRLS' PG COLLEGE, RAIPUR CG

BASIC FORENSIC SCIENCE



BY
DEPARTMENT OF BIOTECHNOLOGY

GOVT DB GIRLS' PG COLLEGE, RAIPUR CG

FRUIT & VEGETABLES PRESERVATION

BY
DEPARTMENT OF HOME SCIENCE

GOVT DB GIRLS' PG COLLEGE, RAIPUR CG

HUMAN RIGHTS

BY
DEPARTMENT OF POLITICAL SCIENCE

GOVT DB GIRLS' PG COLLEGE, RAIPUR CG

CHHATTISGARH ME PARYATAN

BY
DEPARTMENT OF HISTORY

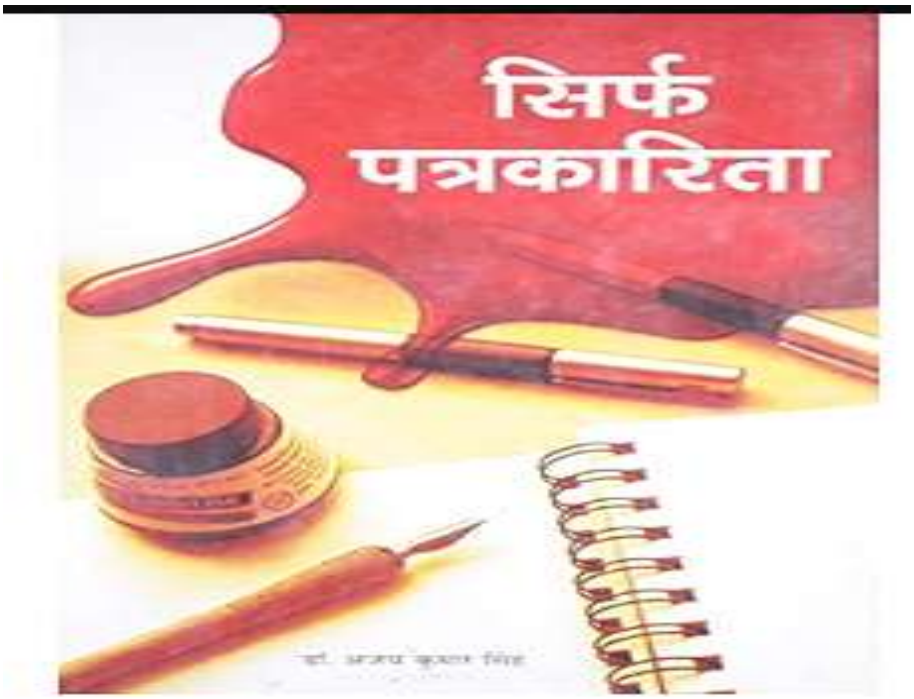
GOVT DB GIRLS' PG COLLEGE, RAIPUR CG

ECONOMIC POLICY OF INDIA

BY
DEPARTMENT OF ECONOMICS

GOVT DB GIRLS' PG COLLEGE, RAIPUR CG

PATRAKARITA



BY
DEPARTMENT OF HINDI

GOVT DB GIRLS' PG COLLEGE, RAIPUR CG

DIGITAL MARKETING

BY

DEPARTMENT OF COMMERCE