स्नातक / स्नातकोत्तर पाठ्यक्रम उपादेयता

स्नातक 1 –हिन्दी. भाषा –

बी0 ए0 प्रथम वर्ष हिन्दी भाषा के प्रथम प्रश्न पत्र के अन्तर्गत विद्यार्थी भाषा की लघुतम इकाई यानि वर्णों के उच्चारण एवं वर्गीकरण के साथ हिन्दी वर्तनी के मानक रूप को समझने में सक्षम होंगे साथ ही हिन्दी भाषा के व्याकरणिक रूप समास, संधि उपसर्ग आदि के सम्बन्ध में जानकारी प्राप्त करके हिन्दी शब्द रचना के संसार से परिचित हो सकेंगे।

बी0 ए0 प्रथम वर्ष हिन्दी भाषा के द्वितीय प्रश्न पत्र के अध्ययन से विद्यार्थी हिन्दी भाषा के उद्भव, विकास, उसकी विविध शैलियों के साथ उपभाषाओं और बोलियों के सम्बन्ध में ज्ञानार्जन कर पायेंगे।

हिन्दी साहित्य – बी0 ए0 प्रथम वर्ष हिन्दी साहित्य के प्रथम प्रश्न पत्र के अध्ययन से विद्यार्थी हिन्दी साहित्य के प्रारम्भिक रूप – आदिकाल भक्ति काल एवं रीतिकाल की प्रवृत्तियों के विभेद के आकलन के साथ उस युग के कवियों एवं उनके साहित्य के अनुशीलन से आज के कवि कर्म और उसके उत्प्रेरक तत्वो के मध्य भेद कर पाने में सक्षम होंगे।

बी0 ए0 प्रथम वर्ष हिन्दी साहित्य के द्वितीय प्रश्न पत्र के अन्तर्गत विद्यार्थी कथा– साहित्य के अध्ययन से मनोरंजन एवं सर्जनात्मक प्रवृत्ति के विकास के साथ उपन्यास को पढ़ने के लिए अभ्यास , एकाग्रता, ध्यान , चिन्तन, मौलिकता के विकास द्वारा बौद्धिक रूप से उन्नयन करने को सक्षम होंगे।

प्रथम प्रश्न पत्र (आधुनिक काव्य) बी0 ए0 द्वितीय

प्रस्तुत प्रश्न पत्र के पाठ्यक्रम से विद्यार्थी द्विवेदी युग के प्रमुख रचनाकारों के काव्य रस का आनन्द लेते हुए काव्य में आधुनिक प्रवृत्तियों को खोजते हुए छायावाद और छायवादोत्तर युगीन काव्य के प्रेम सौन्दर्य, रहस्य, विविध साहित्यिक प्रयोगों के सम्बन्ध में जानकारी प्राप्त कर सकेंगे।

द्वितीय प्रश्न पत्र – बी0ए0 द्वितीय वर्ष के द्वितीय प्रश्न पत्र के पाठ्यक्रम से विद्यार्थी नाटक एवं निबंन्ध विधा के उदभव विकास, प्रकार शैलीगत वैविध्य से स्वयं को जोड़ पाने में सक्षम होंगे साथ ही मनोरंजन / आनन्द एवं सर्जनात्मकता को आत्मसात करने में सक्षम होंगे।

बी० ए० पंचम-सत्र

प्रथम–प्रश्न पत्र– (प्रयोजन मूलक हिन्दी)

छात्र हिन्दी की व्यवहारिक उपयोगिता समझ सकेंगे। पत्रों से अभिप्राय, पत्रों के प्रकारों को समझ सकेंगे। व्यावहारिक –जीवन मे प्रयोजन मूलक हिन्दी के महत्व को समझ सकेंगे। साहित्य को समझने के लिए मीडिया का उपयोग करना समझ सकेंगे। साहित्य के प्रचार व प्रसार में प्रिंट मीडिया व इलेक्ट्रॉनिक मीडिया का उपयोग करना सीख सकेंगे। संचार भाषा के स्वरूप तथा वर्तमान संचार व्यवस्था से अवगत हो सकेंगे।

द्वितीय प्रश्न पत्र (लोक साहित्य)–

छात्र संस्कृति सभ्यता, लोक–साहित्य से अवगत होंगे कुमाऊँ लोक साहित्य से परिचित होंगे। कुमाऊँनी लोकगीत, कुमाऊँनी लोकगाथा, कुमाऊँनी लोक–कथा, लोक–नाटक, लोक–नृत्य से परिचित हो सकेंगे। लोक–संस्कृति, लोक–परम्परा, लोक–पर्व, लोक–मेले, त्यौहार, व्रत, उत्सव, खान–पान, रीति–रिवाज, रहन–सहन, रूढ़िवादिताएँ इत्यादि से परिचित हो सकेंगे।

बी० ए० षष्ठ-सत्र

प्रथम प्रश्न पत्र (हिन्दी–पत्रकारिता)–

छात्र–जीवन में पत्रकारिता का महत्व समझ सकेंगे तथा जीवन में पत्रकारिता का प्रयोग करना सीख सकेंगे। समाचार के संकलन एवम् लेखन के प्रमुख आयामों को समझ सकेंगे। संपादन – कला के महत्व पूर्ण तथ्यों से परिचित हो सकेंगे तथा प्रजा–तांत्रिक व्यवस्था में चतुर्थ स्तम्भ के रूप में पत्रारिता का दायित्व समझ सकेंगे।

द्वितीय प्रश्न पत्र (उत्तराखण्ड का हिन्दी – साहित्य)

उत्तराखण्ड के शिवर साहित्य का उद्भव एवम् विकास का अध्ययन कर सकेंगे। उत्तराखण्ड के कथाकार एवम् उत्तराखड के कहानीकारो से परिचित हो सकेंगे। छात्र उत्तराखण्ड के हिन्दी – साहित्य, कविताकारो से परिचित हो सकेंगे।

एम0 ए0 प्रथम सत्र आदिकालीन एवम निर्गुण भक्तिकाव्य –

प्रथम-प्रश्नपत्र

एम0 ए0 प्रथम सत्र के विद्यार्थी आदि कालीन कवि अब्दुल रहमान, चन्दवरदायी एवं जयदेव कृत रचनाओं के अध्ययन के साथ पाठयक्रम में प्रयुक्त उनकी कृतियों से अपभ्रंश के विविध रूपों के साथ मैथिली भाषा का परिचय तथा ज्ञान प्राप्त कर पायेंगे।

साथ ही कबीरदास एवं जायसीकृत रचना का अध्ययन उन्हें संतकाव्य परम्परा के व्यवहारिक एवं सैद्धान्तिक दोनो पक्षों का ज्ञान प्रदान करने के साथ सामजिक चेतना राष्ट्रीय एवम् नैतिक मूल्यों का विकास करने में सक्षम होगा ।

द्वितीय प्रश्न पत्र

सगुण एवम रीतिकालीन काव्य– एम0 ए0 प्रथम सत्र के विद्यार्थी मध्यकालीन सगुण भक्ति धारा एवं उसकी विविध धारओं के अध्ययन से दोनों के मध्य अन्तर करके आलोचनात्मक एवंम् सैद्धान्तिक दृष्टिकोण को विस्तार देने में सक्षम होंगे रीतिकालीन काव्य के अध्ययन से काव्यशास्त्रीय परम्परा के उदभव एवं विकास के साथ तत्कालीन साहित्य की समृद्ध परम्परा का ज्ञानार्जन कर पायेंगे।

तृतीय प्रश्नपत्र

आधुनिक हिन्दी काव्य :छायावाद तक – विद्यार्थी राष्ट्रीय स्वाधीनता आन्दोलन एवं आधुनिक कविता के आरम्भ का रचनात्मक परिचय प्राप्त करने के साथ नवजागरण में खड़ी बोली के सशक्त आरम्भ के साथ ही साथ छायावादी कविता के अध्ययन से प्रकृति प्रेम, सौन्दर्य, रहस्य आदि को समझने में सक्षम होगें।

चतुर्थ प्रश्नपत्र

हिन्दी साहित्य का इतिहास आदि काल से रीति काल तक –

विद्यार्थी इस प्रश्न पत्र के माध्यम से हिन्दी साहित्य लेखन की परम्परा कालविभाजन नामकरण की समस्या आदि के अध्ययन के साथ आदि काल से रीतिकाल तक के कवियों की रचनाओ से ऐतिहासिक एवं साहित्यिक परिचय प्राप्त कर पायेगें।

पंचम प्रश्नपत्र

हिन्दी साहित्य का इतिहास– आधुनिक काल – विद्यार्थी हिन्दी साहित्य के आधुनिक काल के अध्ययन से राजनीतिक, सामाजिक सांस्कृतिक परिदृश्य को समझकर गद्य साहित्य के उद्भव एवं विकास के साथ उसके विविध रूपो का ज्ञान प्राप्त कर पायेंगे।

एम0 ए0 तृतीय सत्र

प्रथम प्रश्नपत्र

आधुनिक हिन्दी काव्य : छायावादोत्तर एम0 ए0 द्वितीय सत्र के विद्यार्थी छायावादोत्तर हिन्दी कविता के विविध धाराओं यथा प्रगतिवाद, प्रयोगवाद नई कविता आदि के अध्ययन के साथ समकालीन कवियों के रचना संसार के अध्ययन से साहित्य के रचनात्मक एवं सैद्धान्तिक ज्ञान को आत्मसात कर पायेंगे।

द्वितीय प्रश्नपत्र

भाषा विज्ञान – प्रस्तुत पाठ्यक्रम से विद्यार्थी भाषा विज्ञान के अर्थ स्वरूप भाषा व्यवस्था, भाषा व्यवहार के अध्ययन के साथ भाषा विज्ञान के प्रमुख अध्ययन क्षेत्र स्वन, स्वनिम, वाक्य अर्थ आदि का सैद्धान्तिक एवं तकनीकी ज्ञान प्राप्त कर पायेंगे।

तृतीय प्रश्नपत्र

निबन्ध एवं स्मारक साहित्य – विद्यार्थी निबन्ध विधा के स्वरूप प्रकार के अध्ययन के साथ निबन्ध विधा के उदभव एवं विकास का परिचय प्राप्त करते हुए हिन्दी के प्रमुख निबंधकारों के सम्बन्ध में जानकारी ग्रहण करते हुए निबन्ध की शैलियों के सम्बन्ध में जानकारी प्राप्त कर सकेंगे।

चतुर्थ प्रश्नपत्र

हिन्दी भाषा – विद्यार्थी भारत की प्राचीन मध्यकालीन एव आधुनिक आर्य भाषाओ के ऐतिहासिक एवम सैद्धान्तिक परिचय प्राप्त करते हुए हिन्दी के भौगोलिक विस्तार उसकी

उपभाषाओं एवम् बोलियों के समृद्ध संसार को जान सकेंगे तथा हिन्दी के वैश्विक महत्व का ज्ञान प्राप्त कर सकेंगे।

विभा प्रभारी
हिन्दी विभाग
राजकीय महाविद्यालय
रामनगर नैनीताल
उत्तराखण्ड

P.N.G. GOVT. PG COLLEGE RAMNAGAR NAINITAL

Department of Sociology

COURSE OUTCOME

Course	Paper	Course Outcomes (CO)
Graduation Level (B.A.)		
Studying the course students will be able to		
B.A. I Year	Basic Sociological Concepts	**CO 1:** Nature and Scope of Sociology **CO 2:** Basic concepts- Society, Community, Institution & Social Groups. **CO 3:** Status and Role & Social processes. **CO 4:** Culture & Civilization **CO 5:** Social Stratification, Social Differentiation
	Indian Social System	**CO 1:** Features of Indian Society. **CO 2:** Varna, Ashram, Dharma, Sanskara& Karma. **CO 3:** Marriage & Family **CO 4:** Caste system in India & Kinship system. **CO 5:** Social legislations
B.A. II Year	Social Change in India	**CO 1:** Social Change **CO 2:** Process of social change **CO 3:** Industrialization, Urbanization and Urbanism **CO 4:** Modernization, Westernization & Sanskritization **CO 5:** Universalization, Parochialization, & Globalization
	Techniques of Social survey and Social Research	**CO 1:** Social Phenomena Social Survey **CO 2:** Research Design &Hypothesis **CO 3:** Census and Sampling **CO 4:** Data Techniques of Data collection **CO 5:** Presentation of Data & Elementary Statistics
B. A. V Sem	Development of Sociological thought	**CO 1:** Development Of Sociological Thought **CO 2:** Auguste comte**CO 3:** Emile Durkheim **CO 4:** Karl Marks **CO 5:** Max Weber
	Applied Sociology	**CO 1:** Applied Sociology **CO 2:** Social Order **CO 3:** Social Policy **CO 4:** Social Planning **CO 5:** NGOs
B. A. VI Sem	Indian Sociological Thought	**CO 1:** History and Development of Indian Sociological Thought **CO 2:** G.S. Ghurye**CO 3:** Radha kamal Mukherjee **CO 4:** M.N. Srinivas **CO 5:** Yogendra Singh
	Indian Social Problems	**CO 1:** Social Problems **CO 2:** Poverty **CO 3:** Un-employment **CO 4:** Violence against Women's **CO 5:** Problems of Casteism, Communalism, Regionalism and Corruption in Public life
POST GRADUATION LEVEL (M.A.)		
Studying the course students will be able to		
M.A. I Semester Code: SOC-CC-101	Classical Sociological Thinkers	Introduce themselves to the classical theories of Sociology and contributions of different thinkers in this regard. **CO 1:** Auguste comteTheories **CO 2:** Emile Durkheim **CO 3:** Karl Marks **CO 4:** Max Weber

Paper Code: SOC-CC-102	Methods in Social Research	**CO 1:** Social Research **CO 2:** Hypothesis **CO 3:** Approaches of Social Research**CO 4:** Sampling
Paper Code: SOC-CC-103	Rural Sociology	**CO 1:** Rural Sociology **CO 2:** Basic Concept **CO 3:** Caste and Caste Panchayat, Jajmani System **CO 4:** Dominant caste and Rural Factions **CO 5:** Rural Power Structure and leadership
Paper Code: SOC-CC-104	Urban Sociology	**CO 1:** Urban Sociology **CO 2:** Urban Sociology in India **CO 3:** Classification of Urban Areas **CO 4:** Urban Social Structure **CO 5:** Urbanization and Urbanism
Paper Code: SOC-CC-105	Social Psychology	**CO 1:** Social Psychology: Meaning, Nature and Scope, Relation with other Social Sciences **CO 2:** Group Dynamics **CO 3:** Leadership **CO 4:** Public Opinion, Propaganda, Social Collective Behavior, Social Prejudices
Paper Code: SOC-CC-201	Indian Sociological Thought	**CO 1:** Development of Sociology in India **CO 2:** Radha kamal Mukherjee **CO 3:** G.S. Ghurya**CO 4:** M.N. Srinivas
Paper Code: SOC-CC-202	Techniques of Social Research and Statistics	**CO 1:** Research Design **CO 2:** Types and Sources of Data Observation, Interview, Questionnaire and Schedule and Content Analysis. **CO 3:** Classification, Tabulation and Interpretation of Data, Graphic Representation of Data, **CO 4:** Measure of Central Tendency
Paper Code: SOC-CC-203	Rural Change and Rural Reconstruction	**CO 1:** Social Change in Rural India **CO 2:** Rural Social Problems, Peasant Unrest And Peasant Movements **CO 3:** Rural Reconstruction in India **CO4:** Co-operation Movement in Rural India **CO 5:** Community Development Programme:
Paper Code: SOC-CC-204	Urban Problems and Planning	**CO 1:** Problems of Migration, Housing Problems, Slums and Urban Poverty **CO 2:** Urban Problems **CO3:** Theories of Rural-Urban Migration**CO4:** Industrialization and Urbanization **CO 5:** Urban Planning in India
Paper Code: SOC-CC-205	Political Sociology	**CO 1:** Meaning, Nature and Scope of Political Sociology **CO 2:** Political Elite theory **CO 3:** Political Socialization **CO 4:** Political parties, Leadership and Factions and interest groups
MA III SEM	Theoretical Perspectives in Sociology	CO 1: Sociological Theory CO 2: Theory CO 3: Functionalism, Structural-Functionalism CO 4: Conflict Theory CO 5: Structuralism and Post-Structuralism
	Sociology of Development	**CO 1:** Conceptual Perspectivex on Development **CO 2:** Social Structure and Development **CO 3:** Path of Development **CO 4:** Theories of Development &Underdevelopment**CO 5:** Problems of Developed and Developing Societies
	Tribal Society in India	**CO 1:** Tribes in India **CO 2:** Classification of Tribes in India **CO 3:** Tribal Culture and Tribal Social Institutions **CO 4:** Socio-Economic Profile and Development of Tribes and Backward Classes of Uttarakhand **CO 5:** Tribal Development Programmes
	Criminology	CO 1: Criminology, Crime and Criminal CO 2: Factors of Crime and Theories of Criminal Behavior CO 3: Organized Crime, White Collar Crime,Crime against Woman CO 4: Punishment CO 5: Victimology

M. A. IV SEM	Sociology of Development in Indian Context	**CO 1:** Development and its Consequences **CO 2:** Institutional and Cultural barriers to Development **CO 3:** Role of Communication in Development, Social Implication of Info-Tec Revolution **CO 4:** Role of Intellectuals, Bureaucrats and Power Politics in Development **CO 5:** The Problems and Prospects of Development in Uttarakhand Region
	Modern Sociological Perspective	**CO 1:** The Critical Theory **CO 2:** Neo-Maxism Symbolic Interactionism **CO 3:** Phenomenology **CO 4:** Ethnomethodology **CO 5:** Structuration
	Tribal Society in India	**CO 1:** Tribes in India **CO 2:** Classification of Tribes in India **CO 3:** Tribal Culture and Tribal Social Institutions **CO 4:** Socio-Economic Profile and Development of Tribes and Backward Classes of Uttarakhand **CO 5:** Tribal Development Programmes
	Gender and Society	**CO 1:** Social Construction of Gender **CO 2:** Theories of Feminism **CO 3:** Health &Educational Status of Women in India **CO 4:** Women and Economy **CO 5:** Women in Polity
	Social Demography	**CO 1:** Demography, Theories of Population Biological or Natural theories of Population **CO 2:** Socio-Cultural and Economic Theories of Population **CO 3:** Census of India **CO 4:** Composition of Indian Population, Demographic Transition in India. **CO 5:** Population Policy of India
	Empirical Research Report/ Project Work	Meaning, scope, types and significance of Social Research. Importance of research design in Social Research and how to formulate it. How to collect, analyze data and how to write a field report.
	Viva-Voce Examination	The Viva-Voce will be meant for testing the candidate's comprehension and verbal expression of his/her sociological knowledge as covered in the syllabus.

Program outcomes

Sociology learning provides initial knowledge about society, social life and social interactions. It prepares an individual to social life by including values, morals and manners. It gives knowledge about communities in which he interacts like rural, urban and tribal communities. The ability to apply sociological concepts and theories to the real world and ultimately their everyday lives.

Programme Specific Outcomes

- **CRITICAL THINKING:** The programme seeks to develop in students the sociological knowledge and skills that will enable them to think critically and imaginatively about society and social issues.
- **SOCIOLOGICAL UNDERSTANDING:** The ability to demonstrate sociological understandings of phenomena, for example, how individual biographies are shaped by social

structures, social institutions, cultural practices, and multiple axes of difference and inequality.

- **ETHICAL AND SOCIAL RESPONSIBILITY:**Students have to learn about institutions, folkways, mores, culture, social control,social inequality, population composition, population policy, society and culture of India. All thesehelp to instill among the students of Sociology a sense of ethical and social responsibility.
- **ANALYTICAL THINKING:**Field survey and preparation of dissertation paper is an inseparable part of Sociology Programme. Students have to collect primary data for census as well as his/her research topic and analyze the data to draw conclusions. So, qualitative and quantitative analytical skills are enhanced.
- **PROFESSIONAL AND CAREER OPPORTUNITIES:**Students will have the opportunity to join professional careers in Sociology and allied fields. Sociology provides an intellectual background for students considering careers in business, social services, public policy, government service, nongovernmental organizations, foundations, or academia. This programme lays foundation for further study in Sociology, Social work, Rural Development, Social Welfare and in other allied subjects.

Dept. of Sociology

HOD
Sociology Department
P.N.G. Govt. P.G. College
Ramnagar (Nainital)

DEPARTMENT OF ZOOLOGY

Govt. P. G. COLLEGE RAMNAGAR

COURSE OUTCOMES: B.Sc. 1

Lower Non-Chordata

On completion of the course, students are able to:

1. Study and understand the salient features and outline classification of whole phyla included in Protozoa, Porifera, Coelenterata Helminthes.

2. Understand the structure and functions of canal system and affinities of Porifera.

3. Understand the life history, pathogenicity and control measures of various parasites such as Trypanosoma, Leishmania and Entomoeba.

4. Understand the polymorphism in Coelenterata.

5. Understand the brief account of corals and coral reefs.

Higher Non- Chordata

On completion of the course, students are able to:

1. Study and understand the salient features and outline of the classification of whole higher non- chordate Phyla included in protozoa, Annelida, Arthopoda Mollusca, and Echinidermata.

2. Understand the external features and mode of feeding and reproduction.

3. Understand the external features and parasitic adaptation in hirudinaria.

Cell biology

On completion of the course, students are able to:

1. Understand animal cells and various cell organelles by using microphotographs.

2. Understand the structure and function of various cell organelles- Mitochondria, Ribosomes, Lysosomes, E.R., GolgiComplex.

3. Understand the Cell-cycle, mitosis and meiosis.

4. Understand the idea of cell transformation and cancer.

COURSE OUTCOMES: B.Sc. Zoology Semester-II

Molecular Biology

On completion of the course, students are able to:

1. Understand the structure and function of Nucleic acids (DNA& RNA) Watson and Crick DNA double helix model.

2. Understand the structure and function of PCR and its significance.

3. Understand the introduction application of biological techniques.

4. Understand the Tools and Techniques in Molecular Biology.

5. Understand the DNA finger printing.

Taxonomy, Evolution and Elementary Palaeontology

On completion of the course, students are able to:

1. Understand the introduction to taxonomy and systematic their relationship and significance.

2. Understand brief concept and evidences of evolution Lamarckism, Darwinism, synthetic theory of evolution.

3. Understand the kinds of fossils and their significance.

Genetics

On completion of the course, students are able to:

1. Understand the introduction to taxonomy and systematic their relationship and significance.

2. Understand brief concept and evidences of evolution Lamarckism, Darwinism, synthetic theory of evolution.

3. Understand the kinds of fossils and their significance.

B.Sc. Zoology: Semester-III

Paper I: Lower Chordata

1. To study and understand the salient features and outline classification (up to order) of various lower chordate groups as covered under respective taxonomic groups.
2. To study and understand the Parental care in fishes and relation to man
3. To study and understand the Amphibian General Characters and affinities and Parental care.

Paper II: Higher Chordata

1. To study and understand the salient features and outline classification (up to order) of various Higher chordate groups as covered under respective taxonomic groups

2. To study and understand the poisonous and non- poisonous snakes, poison appuratus and snake venom & anti-venom.

3. To study and understand the flightless birds and their distribution, flight adaptations in birds, bird migration and economic importance of birds.
4. To understand the adaptive radiation with particular reference to aquatic mammals.

Paper III: Ecology and Environmental Biology

1. To study and understand the ecology and its relation to humanity

2. To study and understand the energy flow in ecosystem, pyramids of number, biomass and energy.

3. To study and understand the biosphere, biogeochemical cycles: Carbon and Nitrogen cycles.

4. To study and understand the definition and characteristics of density, natality, mortality, migration, growth and growth-curves.

5. To study and understand the Biodiversity and conservation and management of biodiversity

6. Pollution and its control.

B.Sc. Zoology: Semester-IV

Paper I: Developmental Biology

1. To study and understand the significance of fertilization
2. To study and understand chemical and metabolic events during gamete formation and types of eggs.
3. To understand regeneration in invertebrates (Hydra and Planaria) and Vertebrates (Limb regeneration in Amphibia).

Paper II: Applied Zoology

1. To study and understand the elementary knowledge of: (a) Aquaculture (b) Sericulture (c) Apiculture (d) Lac culture (e) Pearl culture (f) Piggery

Paper III: Elementary Entomology and Applied Ichthyology

1. To study and understand the parental care, social life in insects.

2. To study and understand the classification of fishes up to orders, integrated fish farming and migration in fishes.

B.Sc. V Semester

Paper I: Microbiology

1. To study and understand Typical structure of a bacterium, Gram positive and Gram negative bacteria and virus
2. To study and have a brief knowledge of AIDS
3. To study and understand Industrial microbiology- Food production, dairy products, fermented food, alcoholic beverages, microbial spoilage, and food preservation.
4. To study and have a brief knowledge of Antibiotics.

Paper II: Animal Behaviour

1. To study and understand patterns of behaviour : (i) Fixed action patterns(ii) Sign or key stimulus or releasers and (iii) Innate releasing mechanism, Instinctive behaviour.
2. To study and understand Stereotype innate behaviour: Kinases, Taxes and Reflexes. To study and understand Song learning in birds.
3. To study and understand the Communication: Chemical, Visual, Auditory, Electric and tactile.
4. To study and understand the Dance language of honeybees andiological clocks.
5. To study and understand Bird migration with particular reference to the mechanisms of navigation.

Paper III: Toxicology and Histology

1. To study and understand general principles of toxicology, its brief history, environmental toxicology (kinds and sources of toxic agents- animal toxins, plant toxins, pesticides, metals and food additives) and metabolism of toxic substances.
2. To study and understand the dose response relationship, toxic response of blood, organ function tests, teratogenic, reproductive and carcinogenic tests.
3. To study and understand the Histology: Structure of epithelium, connective tissue, cartilage, bone, smooth,, striped and cardiac muscles, and nervous tissue as studied under light microscope.
4. To study and understand the Histological structure of gonads, liver, lung, pancreas and kidney in mammals.

B.Sc. Zoology: Semester-VI

Paper I: Biological Chemistry and Basic Mammalian Endocrinology

1. To study and understand the introduction to biological molecules: Proteins, Amino acids, Carbohydrates, Lipids, Vitamins and Enzymes- their structure, classification and significance and metabolism of Carbohydrates.
2. To study and understand the Endocrinology: General characteristics of endocrine system, mechanisms of hormone action (cellular and sub cellular).
3. To study and understand hormonal functions of the glands namely, Pituitary, Thyroid, Pancreas, Adrenal, Testis and Ovary.
4. To study and understand the Nutrition: Food constituents, intracellular and extracellular digestion, Digestion and absorption of carbohydrate, fat and protein.
5. To study and understand the Respiration: Pulmonary ventilation, respiratory pigments, gaseous transport and control of respiration.
6. To study and understand the ammonotelic, ureotelic and guanotelic animals, urine formation in mammals.
7. To study and understand the Blood vascular system and functions of blood, blood coagulation.
8. To study and understand the Nervous system: Resting and action potential of nerves, synapse and transmission of nerve impulse.
9. To study and understand the Muscular system: Muscle contraction and its Mechanism. A brief idea of tetanus and fatigue.

Paper III: Bioinformatics and Biostatistics

1. To study and explore the elementary knowledge of computers: Organisation of computer, input and output devices, elementary idea of software, hardware and programming languages.

2. To study and understand the use of computers in biological sciences: Sequence, structure and strain databases and their use

3. To study and understand biostatics as a tool in research, Data collection- Random and non-random sampling, data tabulation and data presentation (Graph, Histogram, Scatter diagram).

4. To study and understand Concept of mean, mode, median and of standard deviation and standard error.

07/03/2021

DEPARTMENT OF ZOOLOGY

Govt. P. G. COLLEGE RAMNAGAR

M.Sc.I, II, III & IV Semester

Microbiology: On completion of the course, students are able to:

1. Describe general introduction to Microbiology, kinds of microorganisms and their natural habitat
2. Understand Microbial morphology and physiology, Microbial media &Culture techniques
3. Understand Microbial Growth, Mathematical expression of growth, growth curve, measurement of growth and growth yields, synchronous growth, growth as affected by environmental factors like temperature, acidity, pH, water availability and oxygen.
4. Understand Viruses: Structure and composition, classification, physical properties and viral action, isolation, culture and purification of viruses, Viroids & Prions, RNA & DNA viruses, production of vaccines
5. To understand microbiology of Water, microorganisms of soil, factors affecting microbial community in soil, microorganisms associated with organic matter decomposition, rhizosphere microorganisms, cycles of elements (Carbon, Sulphur and Nitrogen)
6. To understand microbiology of air, food, sources of food poisoning, some fermented foods, preservation of foods.

Non-Chordata: On completion of the course, students are able to:

1. Understand different groups of invertebrate animals are studied in this including Protozoa, Porifera, and coelenterate, Plathyhelminthes, Annelida, Arthropoda, Mollusca and Echinodermata.
2. Understand general characters and classification upto order, some special features, organs, pathogenecity, life history and significance are studied here.
3. Understand parasitic adaptation and life- cycle in different phylum.
4. Understand torsion and pearl formation in mollusca.
5. Describe Phylum Nematodes and give examples of pathogenic Nematodes Ecology

Paper III – Ecology: On completion of the course, students are able to:

1. Understand Ecology: Its relevance to human welfare, subdivisions and scope.
2. Understand the Environment: physical environment; biotic environment; biotic and abiotic interactions, ecosystem diversity, ecosystem services
3. Understand Ecosystem's structure and function: Abiotic and biotic components of aquatic (Lake) and Terrestrial (forest) ecosystems.
4. Understand Laws of limiting factors, impact of temperature, moisture and pH on organisms.
5. Understand Indicators of pollution and eutrophication

Taxonomy and Evolutionary: On completion of the course, students are able to:

1. Understand general taxonomic rules on animal classification.
2. Understand preservation and identification of insects and other specimens using Keys.
3. Gain knowledge of functional anatomy of vertebrates from fishes to mammals.

Molecular Biology: On completion of the course, students are able to:

1. Understand Knowledge about genetics, developmental biology and organogenesis

2. Understand Application of DNA technology and molecular biology for research

3. Understand Gains knowledge about Fine structure of gene, types of mutations, mutagens, Detection of sex linked lethal and visible mutations in Drosophila.

4. UnderstandProkaryotic and Eukaryotic transcription, RNA polymerase.

5. UnderstandIntroduction and landmarks in DNA sequencing.

Concepts in Cell Biology and Genetics: On completion of the course, students are able to:

1. Understand about genetics, developmental biology and organogen
2. Understand structural and functional aspects of basic unit of life i.e. cell concepts
3. Understand concept behind genetic disorder, gene mutations- various causes associated with inborn errors of metabolism
4. Understand different cellorganelles, their structure and rolein living organisms.
5. Understand Biology of cancer: Oncogenes and Tumor Suppressor Genes, Viral and cellular oncogenes, tumor suppressor genes from humans
6. Understand Mendelian genetics: Dominance, segregation, independent assortment, Extensions of Mendelian principles: Codominance, incomplete dominance, gene interactions

Mammalian Endocrinology: On completion of the course, students are able to:

1. Understand the relevance and depth of environmental endocrinology
2. Understand chemical nature, classification and mode of secretion of hormones, hormonal feedback in homeostasis
3. Define and explain the basicprinciples of reproductive endocrinology: Molecular structure, origin, release and transport of sex hormones and their role in reproductive physiology.
4. Students will acquire a broadunderstanding of the hormonalregulation of physiologicalprocesses in invertebrates andvertebrates.

Biochemistry: On completion of the course, students are able to:

1. Understand basic knowledge about various bio molecules and their role in metabolism
2. Understand Classification of enzymes, enzyme kinetics
3. Understand Metabolism of carbohydrates, nucleic acids and metabolic disorders
4. Understand Basic concept of xenobiotic.
5. Understand Chemical structure and significance of coenzymes.

Animal physiology: On completion of the course, students are able to:

1. Understand the entire functions of animal body. It includes nutrition, respiration, heart, excretion, nerve ,physiology etc, in which all structure, function, process and control.
2. Understand detailed concepts of digestion respiration excretion the functioning of nerves and muscles
3. Understand fundamental knowledge of animal physiology
4. Understand Immunity, types of Immunity (Natural Immunity, Acquired Immunity: Active Immunity, Humoral Immunity, and Cell mediated immunity).

Chordata: On completion of the course, students are able to:

1. Understand conceptual knowledge of vertebrates, their adaptations and associations in relation to their environment
2. Understand characters and affinities of Cyclostomata
3. Understand charactersof phylum Protochordates to Mammalia.
4. Understand complex vertebrate interactions.
5. Understand basic concepts of developmental biology
6. Understand aquatic and flying adaptations in mammals

Animal Behaviour: On completion of the course, students are able to:

1. Understand Animal Behaviour and Environment
2. Understand Tools and Techniques for the study of animals in wild: Animal Identification.
3. Understand types of Social Acts, Social Organizations in Termites and Primates, Parental Care with emphasis on Insects, Fishes, Amphibians, Birds and Mammals
4. Understand nderstand Various kinds of Animal adaptations
5. Understand types of Migration, Causes of Migration, Advantages of Migration, Methods of Studying of Migration, Orientation and Navigation

Developmental Biology: On completion of the course, students are able to:

1. Understand mechanism of fertilization, early and late changes in egg organisation caused by fertilization,
2. Understand development and functions of the foetal membranes in mammals Complex Vertebrate interactions.
3. Understand basic concepts of developmental biology
4. Understand distribution of regenerative ability, polarity in regeneration, mechanism of regeneration of amphibian limb and lens,

Biotechnology: On completion of the course, students are able to:

1. Understand origin, definition, scope and importance of biotechnology Biotechnology in India

2. Understand genetic engineering in animals, cells in culture, growth of cell lines

3. Understand use in recombinant DNA technology, genetic manipulations and in a variety of industrial processes,

4. Understand Bioremediation

Bio-Instrumentation, Biostatistics and Computational Biology

On completion of the course, students are able to:

1. To understand principles and techniques of Microscopy

2. Understand Tools, Techniques and Biostatistics: Understanding of basic concepts of instrumentation such as centrifugation Chromatographic techniques,
3. Understand Students gain skills in techniques of chromatography, electrophoresis, spectroscopy and PCR
4. Understand Students gain skills in basics of computers, operating systems, overview of programming languages
5. Understand Application of internet and statistical bioinformatics in research

M.Sc. Vth Semester

Specialization (Fish and fisheries)

Paper – I (a) General Ichthyology

On completion of the course, students are able to:

1. Understand gains knowledge of Classification of fishes, Systematic position, habit and habitat,
2. Understand Locomotion in fishes
3. Understand brief knowledge of sexual dimorphism and courtship
4. Understand Parental care in fishes
5. Understand Hill stream adaptations
6. Understand Venomous and non-venomous fishes
7. Understand Fish pheromones, and Coloration in fishes

Paper – II (a) Applied Ichthyology

On completion of the course, students are able to:

1. Understand general survey of the marine, estuarine and inland capture fisheries of India with particular reference to fishery resources of Uttaranchal
2. Understand methods of fishing: Fishing gears and crafts, Cold water fishery
3. Understand Ecology and productivity of fish ponds, Pollution in relation to fisheries.
4. Understand Exotic fishes and their merits and demerits.

Specialization (Entomology)

Paper I (b): Systematics and Applied Entomology

Entomology:On completion of the course, students are able to:

1. Classify insects and have knowledge of beneficial and non-beneficial insects

2. Understand methods of collection, preservation and culture of insects

3. Understand Classification of Insects

4. Understand Role of insects in spread of diseases

5. Understand Parental care in insects

6. UnderstandPrinciples and Practices of Pest Control

Paper II (b) – Biology of Insects: Morphology, Physiology & Development

On completion of the course, students are able to:

1. Understand structure of an insect head, thorax and abdomen; Appendages of head (mouthparts and antennae) and thorax (legs and wings).
2. Understand structure and functions of blood and mode of circulation in insects.
3. Understand structure and functions of different types of visual and sound producing organs in insects.
4. Understand structure of pheromone producing glands, different types of pheromones and their chemical nature.

07/03/2021

B. Sc.I Year
Deptt. of Botany
Govt. P.G. College, Ramnagar (Nainital)

COURSE OUTCOME

B. Sc.I Year

PAPER-I: ALGAE, FUNGI, BACTERIA, VIRUSES AND LICHENS

- To understand the introduction, classification and salient features of algae and their place among the organism.
- To understand about the reproduction, types of lifecycles and alternation of generation in algae.
- To role of algae as food, fodder, in agriculture, industry and publichealth.
- Providing knowledge about Introduction and salient features of Fungi. To get knowledge regarding outline of classification of fungi.
- To understand about the Somatic structure of fungi andEcological groups of fungi, Importance of fungi both beneficial and harmful.
- To understand the Pathology of fungal plant diseases: A brief idea about disease symptoms, control of plantdiseases; brief idea about the exclusion, eradication and protection of plants.
- To understand about the Life history ofimportant genera of algae and fungi.
- To understand Diversity of Microbiology, a general account.Providing introductory knowledge about Archaebacteria and Eubacteria, reproduction and economic importance.
- To understand characteristics, nature, replication,transmission of viruses and economic importance of Viruses.
- To understand general characteristics, structure, reproduction, economic importance, symbiotic relationship and habitats of Lichens.

PAPER – II: BRYOPHYTA, PTERIDOPHYTAANDGYMNOSPERM

- To get knowledge regarding distribution, habitat,characteristic features and economicandecological importance alternation of generation ofBryophyta.
- To understand about the Life history andcomparative study of *Riccia, Marchantia, Pellia, Anthoceros* and *Funaria.*
- To get introductory knowledge about introduction and salient features, classification, alternation of generation and economic importance of Pteridophyta.
- To understand about the Life history and comparative study of some important genera of bryophytes, pteridophytes and gymnosperms.
- To provide general account of information about introduction and salient features of Gymnosperms.
- To understand comparative study of *Cycas, Pinus* and *Ephedra* on the basis of morphology and anatomyof the vegetative plant body, sporophylls (their arrangement) and sporangia spores, maleand female gametophytes, pollination, fertilization, embryology and seed germination.
- To understand about the fossils, their types and process of fossilization.

B. Sc.II Year

PAPER I – TAXONOMY, PLANT ANATOMYANDEMBRYOLOGY

- To get general idea in of the classification proposal by Bentham & Hooker and Hutchinson.

- To know about ICBN, Botanical Survey of India, Botanical gardens and Herbaria
- To understand distinguishing features of the following families Ranunculaceae, Brassicaceae, Rutaceae, Fabaceae, Rosaceae, Apiaceae, Asteraceae, Solanaceae, Lamiaceae, Orchidaceae, Liliaceae, Poaceae.
- To learn about Meristematic and Permanent tissues with special reference to Root and Shoot apical meristems and their function; Simple, Complex and Special types of tissues.
- To know structure and functions of epidermis and stomata, and anatomy of dicot and monocot (root, stem and leaf)
- To understand about Root-stem transition, Secondary growth secondary growth and anomalous secondary growth in root and stem.

PAPER II – CYTOGENETICS, PLANT BREEDING AND BIOTECHENOLOGY

- To learn about cell structure, cell connections and Structure and functions of cell organelles.
- To study Cell division: cell cycle.
- To understand the structure and function of Eukaryotic chromosome, DNA structure & replication.
- To know general account of structural (deficiency, duplication, inversion & translocation) and numerical (Euploidy & Aneuploidy), alteration in chromosomes.
- To learn about sex chromosomes, sex determination andSex linked inheritance.
- To understand the aims and objectives, basic techniques of plant breeding.
- To know role of Biotechnology in modern life.
- To understand tools and techniques of genetic engineering.
- To learn and understand Plant tissue culture technique.
- To know Industrial Biotechnology and Biotechnology with regard to microorganisms.

B. Sc. III Year

PAPERI - PLANT PHYSIOLOGY, MORPHOGENESIS AND BIOCHEMISTRY

- To understand transpiration and its significance, about mineral nutrition, translocation in phloem.
- To get knowledge about acrobic and anaerobic respiration andphotosynthesis.
- To understand seed germination and dormancy, plant growth, physiology of flowers and growth regulators.
- To know about Carbohydrates, protein and fats and lipids in plants.

PAPER II– ECOLOGY, ECONOMIC BOTANYAND BIOSTASTICS

- To understand about the interaction of plant and environment, Population, ecological succession.
- To know about Ecosystem, Biogeochemical cycles, environmental pollution and Biodiversity and its conservation.
- To understand about Introduction, scope and importance of statistics in plant science.
- To know about aim of sampling, classification, tabulation and graphic presentation of data.
- To measures of dispersion, measure CorrelationandModern approach of statistical packages.
- To understand about the brief knowledge of Botany and commercial utilization and uses of the Cereals and millets, fruits, fibres,vegetables,timbers,medicinal plants, oils and beveragesplants.

Programme Outcomes of B.Sc. (Botany)

- Critically evaluation of ideas and arguments by collection relevant information about the plants, so as recognize the position of plant in the broad classification and phylogenetic level.
- Identify problems and independently propose solutions using creative approaches, acquired through interdisciplinary experiences, and a depth and breadth of knowledge/expertise in the field of Plant Identification.
- Accurately interpretation of collected information and use taxonomical information to evaluate and formulate a position of plant in taxonomy.
- Students will be able to present scientific hypotheses and data both orally and in writing in the formats that are used by practicing scientists.
- Students will be able to identify the major groups of microorganisms and plants, and be able to classify them within a phylogenetic framework. Students will be able to compare and contrast the characteristics of plants, algae, and fungi that differentiate them from each other and from other forms of life.
- Students will be able to use the evidence of comparative biology to explain how the theory of evolution offers the only scientific explanation for the unity and diversity of life on earth. They will be able to use specific examples to explicate how descent with modification has shaped plant morphology, physiology, and life history.
- Students will be able to explain how Plants function at the level of the gene, genome, cell, tissue, Flower development. Drawing upon this knowledge, they will be able to give specific examples of the physiological adaptations, development, reproduction and mode of life cycle followed by different forms of plants.
- Students will be able to explain the ecological interconnectedness of life on earth by tracing energy and nutrient flow through the environment. They will be able to relate the physical features of the environment to the structure of populations, communities, and ecosystems.
- Students will be able to demonstrate proficiency in the experimental techniques and methods of analysis appropriate for their area of specialization within biology.

Programme Specific Outcomes of B.Sc. (Botany)

- **Knowledge and understanding of:**
  - The range of plant diversity in terms of structure, function and environmental relationships.
  - The evaluation of plant diversity.
  - Plant classification and the flora of Maharashtra.
  - The role of plants in the functioning of the global ecosystem.
  - A selection of more specialized, optional topics.
  - Statistics as applied to biological data.
- **Intellectual skills** – able to:
  - Think logically and organize tasks into a structured form.

- Transfer of appropriate knowledge and methods from one topic to another within the subject.
- Understand the evolving state of knowledge in a rapidly developing field.

- **Practical skills:** Students learn to carry out practical work, in the field and in the laboratory, with minimal risk. They gain introductory experience in applying each of the following skills and gain greater proficiency in a selection of them depending on their choice of optional modules.
  - Interpreting plant morphology and anatomy.
  - Plant identification.
  - A range of physiochemical analyses of plant materials in the context of plant physiology and biochemistry.
  - Plant pathology to be added for sharing of field and lab data obtained.
  - Scientific Knowledge: Apply the knowledge of basic science, life sciences and fundamental process of plants to study and analyze any plant form.
- **Problem analysis:** Identify the taxonomic position of plants, formulate the research literature, and analyze non reported plants with substantiated conclusions using first principles and methods of nomenclature and classification in Botany.
- **Conduct investigations of complex problems:** Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and development of the information to provide valid conclusions.
- **Modern tool usage:** Create, select, and apply appropriate techniques, resources, and modern instruments and equipments for Biochemical estimation, Molecular Biology, Biotechnology, Plant Tissue culture experiments, cellular and physiological activities of plants with an understanding of the application and limitations.
- **The Botanist and society:** Apply reasoning informed by the contextual knowledge to assess plant diversity, its importance for society, health, safety, legal and environmental issues and the consequent responsibilities relevant to the biodiversity conservation practice.
- **Environment and sustainability:** Understand the impact of the plant diversity in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
- **Project management and finance:** Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
- **Life-long learning:** Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

Dr. S. S. Maurya

M. Sc. – Botany
Deptt. of Botany
Govt. P.G. College, Ramnagar (Nainital)

COURSE OUTCOME

I Semester

Paper I: Microbiology (Bacteria, Viruses and Lichens)

- To understand general account of Microorganisms.
- To learn aboutmethods of isolation and culture of microorganisms.
- To understand themorphology of Bacterial, viruses and lichens.

Paper II: Phycology

- To learn about ecology of Algae and Classification of Algae.
- To understanduseful and harmful aspects of algae.
- To get knowledge on the following orders with detailed study on important genera of algae.

Paper III: Mycology

- To understand general characteristics, classification,reproduction,phylogeny of fungi and economic importance of Fungi.
- To understand general accountof the following classes of fungi with emphasis on life cycle of someimportant genera.

Paper IV: Bryology and Pteridology

- To get knowledge on origin, relationship and evolutionary trends in Bryophytes.
- To understand modern systems of classification of Bryophytes and salient features of some important genera of bryophytes.
- To get knowledge on brief account of the following classes with emphasis on some important genera of Pteridophytes.

II Semester

Paper V: Gymnosperms and Palaeobotany

- To understand history, classification, distribution and evolution of Gymnosperms.
- To get brief account Gymnosperms.
- To know about preservation of fossil plants, types of fossils, modes of formation of different kinds offossils, Gondwana flora.

Paper VI: Diversity and Taxonomy of Angiosperms

- To understand about the important system of classifications of angiosperms.
- To understand about the salient features of International Code of Botanical Nomenclature and Plant Exploration.
- To understand Population and the environment, ecads, ecotypes,evolution and differentiation of species.
- To get brief account on herbarium, Flora, histological, cytological, phytochemical,serological, biochemical and molecular techniques.
- To know about distinguishing features only of the important families and their economic importance.

Paper VII: Plant Morphology, Anatomy and Embryology

- To get information regarding morphology of flower, stamen and carpel, shoot apical meristem, leaf growth and differentiation.
- To understand about the structure of anther andOvule, and their development.
- To understand about the floral characteristics, pollinationmechanism and vectors.
- To understand about the Endosperm development and dormancy.

- To understand about the - General account of Tissue and Anamolous Secondary Growth.

Paper VIII: Cell and Molecular Biology

- To get brief account onStructure, functions and genome organization of cell and cell orgenealles.
- To understand about the structure, protein synthesis, mechanism of translocation, Initiation andtermination.
- To get knowledge on different Techniques used in cell biology with special reference toImmunotechniques, FISH, GISH and confocal microscopy.

III Semester

Paper IX: Plant Ecology

- To get knowledge on major biomes and vegetation typesand environmental factorsof the world.
- To understand the Vegetation organization,mechanism and types of Ecological succession.
- To understand the structure and functions, role and application of biodiversity in ecosystem function; speciation andextinction; IUCN categories of threat, distribution and global patterns of biodiversity.
- To know brief account ofkinds; sources, quality parameters of Environmental pollution; effects on plants andecosystems and remedies.
- To get information regarding Greenhouse gases sources, trends and role; ozone layer and ozone hole;consequences of climate change (CO_2 sequestration, global warming, sea level rise, UVradiation).

Paper X: Cytogenetics and Plant Breeding

- To understand about the Chromatin organization,structural and numerical alterations in chromosomes,genetics of prokaryotes and eukaryotic organisms.
- To know detailed account onGene structure and expression.
- To know detailed account on mutation,DNA damage and repair mechanisms,Effect of aneuploidy onphenotypes in plants; transmission of monosomics and trisomics and their use inchromosome mapping of diploid and polyploidy species.
- To understand about the C-value paradox; cot-curves and theirsignificance; restriction mapping-concept and techniques.

Paper XI: Biotechnology

- To understand about thePrinciple and scope, bio-safety guidelines of Biotechnology.
- To know detailed account onPlant cell and tissue culture, somatic hybridizationand somaclonal variation.
- To know detailed account onRecombinant DNA technology
- To understand about theGenetic engineering of plantswith special reference to the development of transgenic plant.

Paper XII: Plant Physiology and Biochemistry

- To know detailed account onMembrane transport and translocation of water and solutes.
- To understand about theSignal transduction and sensory photobiology.
- To understand about thephotosynthesis and respiration.
- To understand about thenitrogen fixation and metabolism andplant growth regulators.
- To know detailed account onStress physiology,Carbohydrates, Lipids and Alkaloids.

Semester IV

Paper XIII: Plant Resource Utilization and Conservation

- To know detailed account onSustainable development,World centres of primary and secondary diversity of domesticated plants.

- To understand about theUses of important plantsfood, forage, fodder, fibre crops, Medicinal&aromatic plants and vegetable oil yielding plants.
- To understand about theConservation of plant biodiversity, Principles of conservation, extinction, environmentalstatus of plants based on international Union for conservation of Nature (IUCN).
- To know detailed account onStrategies for *in-situ* conservation and for *ex-situ* conservation.

Elective Course/ Special Paper XIV (ii) Plant Pathology

- To know detailed account onHistory of plant pathology in India.
- To know detailed account on Dissemination of pathogensandPhysiology of diseased hosts.
- To know detailed account on Seed pathology, market diseases of fruits and vegetables.
- To understand the Disease control including cultural practices, chemical methods, biological control, use of resistant varieties, quarantine and integrated management for disease control.To know detailed account on brief account, structure, importance, disease cycle and control of the fungi caused diseases.
- To know detailed account onGeneral characteristics, importance, disease cycle and control of the bacterial, viral and mycoplasma disease.

Programme Outcomes for M.Sc. (Botany)

Plant sciences is now an amalgamation of basic and applied science. Plants besides being the The unique capability of plants to trap solar energy and provide food to all cannot be replicated by any system. Conventional studies like plant identification is now being supplemented with molecular techniques like DNA Barcoding. The courses have been designed to benefit all Botany students to study various aspects of plant science including its practical applications. Keeping in mind that these students can take up teaching at different levels, research work in research institutes and or industry, doctoral work, environment impact assessment, biodiversity studies, entrepreneurship, scientific writing relevant topics have been included in the curriculum.

- Understanding the classification of plants from cryptogams to Spermatophyte. Identification of the flora in field. Study of biodiversity in relation to habitat correlate with climate change, land and forest degradation. Application of Botany in agriculture through study of plant pathology. Paleobotany to trace the evolution of plants.
- Understand the ultrastructure and function of cell membranes, cell communications, signaling, genetics, anatomy, taxonomy, ecology and plant Physiology and biochemistry. To understand the multi functionality of plant cells in production of fine chemicals. There wide spread industrial applications.
- Molecular and Physiological adaptations in plants in response to biotic and abiotic stress. Genes responsible for stress tolerance genetic engineering of plants.

Programme Specific Outcomes of M.Sc. (Botany)

Students would be benefited with knowledge of core subjects like plant diversity, physiology and biochemistry, molecular cytogenetics and application of statistics etc. which are offered in these subjects Modules on analytical techniques, plant tissue culture and phytochemistry would make them obtain skills in doing research.

- **Application of knowledge:** Maintain a high level of scientific excellence in botanical research with specific emphasis on the role of plants. Create, select and apply appropriate techniques, resources and modern technology in multidisciplinary way. Practice of subject with knowledge to design experiments, analyze and interpret data to reach to an effective conclusion.
- **Ability to covey the concept clearly:** They would identify, formulate and analyze the complex problems with reaching a substantiated conclusion. Logical thinking with application of biological, physical and chemical sciences. Learning that develops analytical and integrative problem-solving approaches.
- **Team work:** Students would perform functions that demand higher competence in national/international organizations with sporty spirits and helping each other.
- **Environmental and Sustainability:** Best problem-solving skills in students would encourage them to carry out innovative research projects thereby making them to use knowledge creation in depth.
- **Life Long learning and motivating others to learn:** They would lend the support to other students to grow with them with equal opportunities. Global thinking Knowledgeable disciplined students with good values, ethics, kind heart will help in nation building globally.

Dr. S. S. Maur

प्राचार्य
स्नातकोत्तर महाविद्यालय
रायपुर (छत्तीसगढ़)

Department of Political Science
Course Outcome B.A. Political Science

कक्षा– B.A. I Year
प्रश्न–पत्र I– राजनीति विज्ञान के मूल सिद्धान्त

- विद्यार्थी राजनीति और राजनीति विज्ञान के अर्थ एवं अन्तर को समझने में सक्षम होंगे।
- राजनीतिक सिद्धान्त एवं चिन्तन के महत्व को समझने में सक्षम होंगे।
- राज्य के अंगों, उनके कार्यों एवं राष्ट्र एवं राज्य के मध्य अन्तर को समझ पाएगें।
- प्रभुसत्ता का अर्थ एवं विशेषताओं का ज्ञान प्राप्त करेंगे।
- शक्ति प्राधिकार एवं वैधता के विषय में जानेंगे।
- अधिकार एवं कर्त्तव्य समझेंगे तथा राजनीतिक का ज्ञान प्राप्त करेंगे।

कक्षा– B.A. I Year
प्रश्न–पत्र –II

- संविधान की विशेषताओं, संविधानवाद एवं समस्याओं के विषय में ज्ञान प्राप्त करेंगे।
- संसदात्मक एवं अध्यक्षात्मक शासन प्रणाली के बीच अन्तर को समझेंगे एवं गुण–दोषों के विषय में ज्ञान प्राप्त होगा।
- एकात्मक एवं संघात्मक प्रणाली के विषय में ज्ञान प्राप्त होगा एवं गुण–दोषों को जानेंगे।
- राजनीतिक दलों एवं दबाव समूहों के मध्य अन्तर एवं विशेषताओं के विषय में ज्ञान प्राप्त करेंगे।
- निर्वाचन प्रणाली के प्रकार, गुण–दोष एवं विशेषताओं का ज्ञान प्राप्त होगा।
- लोकतन्त्र के प्रकार, प्रतिनिधित्व एवं सहभागिता के विषय में जाना एवं इसके महत्व को समझेंगे।

कक्षा– B.A. II Year
प्रश्न–पत्र I – पाश्चात्य राजनीतिक चिन्तन के आधार

- प्लेटो के साम्यवाद का ज्ञान एवं महत्व का ज्ञान प्राप्त होगा।
- प्लेटो के शिक्षा सिद्धान्त, न्याय सिद्धान्त का ज्ञान प्राप्त होगा।
- अरस्तू के दास प्रभु, परिवार नागरिकता पर दिए गये विचारों की जानकारी प्राप्त करेंगे।
- अरस्तू को राजनीति विज्ञान का पिता क्यों कहा जाता है? इसका ज्ञान प्राप्त होगा।
- हॉब्स, लॉक, रूसो के सामाजिक समझौता सिद्धान्त का ज्ञान प्राप्त कर सकेंगे।
- बेंथम एवं मिल के उपयोगितावाद का ज्ञान प्राप्त होगा।

कक्षा– B.A. II Year

प्रश्न–पत्र II – प्रमुख राजनीति विचारधाराओं का परिचय

- रूढ़िवाद एवं नव रूढ़िवाद की विशेषताओं के विषय में ज्ञान प्राप्त होगा।
- उदारवाद एवं नव उदारवाद की विशेषताओं व महत्व को समझेंगे।
- समाजवाद के अर्थ को जानेंगे, समाजवाद के समाज के विकास में योगदान का ज्ञान प्राप्त होगा।
- मार्क्सवाद, द्वन्द्वात्मक भौतिकवाद, वर्ग संघर्ष का सिद्धान्त का ज्ञान प्राप्त होगा एवं साम्यवाद के महत्व को जानेंगे।
- फासीवाद एवं नाजीवाद की विशेषताओं एवं महत्व के विषय में ज्ञान प्राप्त करेंगे।
- पर्यावरणवाद की विशेषताओं एवं महत्व को जानेंगे।

कक्षा– B.A. V Semester.

प्रश्न–पत्र I– अन्तर्राष्ट्रीय राजनीति में वर्तमान मुद्दे

- शीत युद्ध के अन्त एवं नव शीत युद्ध की जानकारी प्राप्त करेंगे।
- अन्तर्राष्ट्रीय सम्बन्धों के सिद्धान्तों का ज्ञान प्राप्त होगा।
- निःशस्त्रीकरण, परमाणु हथियारों के विषय में ज्ञान प्राप्त होगा।
- गुट निरपेक्ष आन्दोलन का अर्थ एवं महत्ता का ज्ञान प्राप्त करेंगे।
- दक्षिण सहयोग के संदर्भ में सार्क एवं आसियान जैसे क्षेत्रीय संगठनों की महत्ता का ज्ञान प्राप्त होगा।
- भारतीय संदर्भ में विदेश नीति के विषय में जानेंगे।
- इस्लामिक आतंकवाद के विषय में ज्ञान प्राप्त होगा।
- उदारवाद, नीजिकरण एवं वैश्वीकरण के विषय में ज्ञान प्राप्त होगा।

प्रश्न–पत्र II– लोक प्रशासन के तत्व

- लोक प्रशासन का अर्थ, क्षेत्र का ज्ञान प्राप्त होगा। लोक प्रशासन एवं निजी प्रशासन में अन्तर को समझेंगे।
- तुलनात्मक लोक प्रशासन के प्रकारों को जानेंगे।
- विकास प्रशासन की विशेषता को समझेंगे।
- नवीन लोक प्रशासन एवं लोक प्रशासन में लोक प्रबन्ध के महत्व के विषय में ज्ञान प्राप्त होगा।
- पदसोपान, नियन्त्रण की सीमा, आदेश की एकता, प्रत्यायोजन पर्यवेक्षण, समन्वय का संगठन में महत्व को जानेंगे।
- सूत्र एवं स्टाफ अभिकरण, विभाग एवं लोक नियमों के विषय में ज्ञान प्राप्त होगा।
- भारत के संदर्भ में नियोजन के महत्व एवं विशेषताओं के विषय में ज्ञान प्राप्त होगा।

कक्षा– **M.A. I Semester**

प्रश्न–पत्र – लोक प्रशासन

- लोक प्रशासन के अर्थ, क्षेत्र एवं महत्व को जानेंगे।
- नवीन लोक प्रशासन एवं लोक प्रबन्ध के विषय में ज्ञान प्राप्त होगा।
- वैज्ञानिक प्रबन्ध शास्त्रीय सिद्धान्त, नौकरशाही सिद्धान्त का ज्ञान प्राप्त होगा।
- मुख्य कार्यपालिका, प्रकार, कार्य के विषय में ज्ञान प्राप्त होगा।
- निजी प्रशासन में भर्ती, प्रशिक्षण, प्रमोसन, नियोक्ता कर्मचारी सम्बन्ध, सामान्ज एवं विशेषज्ञों के विषय में ज्ञान प्राप्त करेंगे।

कक्षा– **M.A. I Semester**

प्रश्न–पत्र – पाश्चात्य राजनीतिक विचारक

- प्लेटो के साम्यवाद, राज सम्बन्धी विचारों, शिक्षा सिद्धान्त के विषय में ज्ञान प्राप्त करेंगे।
- अरस्तू के दास सम्बन्धी विचारों, नागरिकता सम्बन्धी विचारों संविधान का वर्गीकरण का ज्ञान प्राप्त होगा।
- रोमन विचारकों के विचारों का ज्ञान प्राप्त होगा।
- एक्वीनास के दार्शनिक एवं धार्मिक दर्शन का अध्ययन किया।
- मैकियावली के धर्म एवं राजनीति को पृथक करने वाले विचारों का ज्ञान प्राप्त करेंगे।

कक्षा– **M.A. I Semester**

प्रश्न–पत्र – भारतीय राजनीतिक व्यवस्था

- भारतीय राजनीतिक व्यवस्था में ऐतिहासिक राजनीतिक भूमिका का ज्ञान प्राप्त होगा।
- संविधान निर्माण का ज्ञान प्राप्त किया, संविधान सभा की भूमिका को जानेंगे।
- संविधान की प्रस्तावना, मौलिक अधिकार, कर्त्तव्य एवं नीति निदेशक तत्वों की उपयोगिता से सम्बन्धित ज्ञान प्राप्त होगा।
- संघीय सरकार के तहत राष्ट्रपति, मंत्री परिषद, मन्त्री मण्डल, उच्चतम न्यायालय एवं न्यायिक पुनरावलोकन का आलोचनात्मक अध्ययन से अवगत होंगे।
- राज्य सरकारों के सभी अंगों का ज्ञान प्राप्त होगा।
- पंचायतीराज संस्थाओं का ज्ञान प्राप्त होगा।

कक्षा– **M.A. I Semester**

विषय– तुलनात्मक राजनीति

- तुलनात्मक राजनीति के प्रकार, क्षेत्र एवं उपागमों का ज्ञान प्राप्त होगा।
- राजनीतिक व्यवस्था सिद्धान्त के महत्व को जानेंगे।
- व्यवस्था सिद्धान्त, संरचनात्मक–प्रकार्यात्मक सिद्धान्त, कार्ल डाइच का संचार सिद्धान्त की विशेषता एवं महत्व के विषय में ज्ञान प्राप्त होगा।
- राजनीतिक संस्कृति एवं समाजीकरण, राजनीति विकास एवं आधुनिकीकरण का ज्ञान प्राप्त होगा।
- राजनीतिक अभिजन, राजनीतिक दल, दबाव समूहों का अर्थ एवं महत्व तथा विशेषताओं को जानेंगे।
- लोकमत तथा निर्वाचन प्रणाली के विषय में ज्ञान प्राप्त होगा।

कक्षा– **M.A. III Semester**

प्रश्न–पत्र I– भारतीय राजनीतिक विचारक

- प्राचीन एवं मध्यकालीन राजनीतिक विचार एवं योगदान को ज्ञान प्राप्त होगा।
- गोपाल कृष्ण गोखले नरम दल से सम्बन्धित विचारों को समझेंगे।
- तिलक एवं उग्र दल का ज्ञान प्राप्त होगा।
- अरविन्दो के आध्यात्मिक व दार्शनिक विचारों को जानेंगे।
- गाँधी स्वतंत्रता संग्राम में योगदान को जानेंगे।
- सावरकर एवं इकबाल के विचारों को जानेंगे।
- अम्बेडकर के संविधान निर्माण एवं बौद्ध धर्म के विषय में एवं जातीय अस्पृश्यता सम्बन्धी विचारों को जानेंगे।
- नेहरू के पंचशील, गुटनिरपेक्षता आन्दोलन एवं शान्तिदूत एवं भारत की विदेश नीति में महत्व को समझेंगे।
- लोहिया का चौखम्बा राज एवं समाजवाद का ज्ञान प्राप्त होगा।
- जय प्रकाश नारायण का लोकनायक तक का सफर 1975 से 1977 तक योगदान को जानेंगे अराजनीतिक व्यक्तित्व का ज्ञान प्राप्त होगा।

कक्षा– **M.A. III Semester**

प्रश्न–पत्र – भारतीय प्रशासन

- केन्द्र राज्य के बीच विधायी, कार्यपालिका एवं वित्तीय सम्बन्धों का ज्ञान प्राप्त होगा।
- अखिल भारतीय सेवाओं, केन्द्रीय सेवाओं, प्रान्तीय सेवाओं का ज्ञान प्राप्त होगा एवं संघ एवं राज्य लोक सेवा आयोग एवं लोक सेवकों के प्रशिक्षण के विषय में जानेंगे।
- राष्ट्रीय स्तर पर योजना निर्माण, राष्ट्रीय विकास परिषद योजना आयोग, नीति आयोग की संरचना एवं कार्यों का ज्ञान प्राप्त होगा।
- लोक प्रशासन में प्रबन्ध नियंत्रण एवं समस्याओं के विषय में ज्ञान प्राप्त होगा।
- प्रशासन पर संसद, वित्त प्रशासन, नियंत्रक एवं महालेखा परीक्षक के नियन्त्रण के विषय में ज्ञान प्राप्त होगा।
- भारत में प्रशासनिक सुधार, गुड गवर्नेंस, ई–गवर्नेंस एवं सूचना के अधिकार की भूमिका के विषय में ज्ञान प्राप्त होगा।

कक्षा– **M.A. III Semester**

प्रश्न–पत्र – भारतीय राजनीतिक विचारक

- प्राचीन एवं मध्यकालीन राजनीतिक विचार एवं योगदान को समझेंगे।
- गोपाल कृष्ण गोखले नरम दल से सम्बन्धित विचारों को जानेंगे।
- तिलक एवं उग्र दल का ज्ञान प्राप्त होगा।
- अरविन्दो के आध्यात्मिक व दार्शनिक विचारों को समझेंगे।
- गाँधी स्वतंत्रता संग्राम में योगदान को समझेंगे।
- सावरकर एवं इकबाल के विचारों को जानेंगे।
- अम्बेडकर के संविधान निर्माण एवं बौद्ध धर्म के विषय में एवं जातीय अस्पृश्यता सम्बन्धी विचारों को जान सकेंगे।

- नेहरू के पंचशील, गुटनिरपेक्षता आन्दोलन एवं शान्तिदूत एवं भारत की विदेश नीति में महत्व को जान सकेंगे।
- लोहिया का चौखम्बा राज एवं समाजवाद का ज्ञान प्राप्त कर सकेंगे।
- जय प्रकाश नारायण का लोकनायक तक का सफर 1975 से 1977 तक योगदान को जान सकेंगे अराजनीतिक व्यक्तित्व का ज्ञान प्राप्त हो सकेगा।

कक्षा– **M.A. III Semester**

*प्रश्न–पत्र – **Political Ideology** विचार एवं विचाराधाराओं की अवधारणायें*

- अनुदारवाद–उदारवाद की परिभाषा, विशेषताएं एवं प्रकारों का ज्ञान प्राप्त होगा।
- समाजवाद की विशेषताओं, अर्थ एवं महत्व का ज्ञान प्राप्त होगा।
- मार्क्सवाद–द्वन्द्वात्मक भौतिक वाद, वर्ग संघर्ष का सिद्धान्त एवं अतिरिक्त मूल्य का सिद्धान्त, मार्क्सवाद की उपयोगिता को जान सकेंगे।
- *अस्तित्ववाद शास्त्रे का अस्तित्ववाद एवं उसकी विशेषताओं का ज्ञान प्राप्त होगा।*
- बहुसंस्कृतिवाद का आलोचनात्मक एवं विश्लेषणात्मक सार्थक अध्ययन कर सकेंगे।

कक्षा– **M.A. III Semester**

प्रश्न–पत्र – **Political Ideology** विचार एवं विचाराधाराओं की अवधारणायें

- *अनुदारवाद–उदारवाद की परिभाषा, विशेषताएं एवं प्रकारों का ज्ञान प्राप्त होगा।*
- समाजवाद की विशेषताओं, अर्थ एवं महत्व का ज्ञान प्राप्त करते रहेंगे।
- मार्क्सवाद–द्वन्द्वात्मक भौतिक वाद, वर्ग संघर्ष का सिद्धान्त एवं अतिरिक्त मूल्य का सिद्धान्त, मार्क्सवाद की उपयोगिता को जानेंगे।
- अस्तित्ववाद–शास्त्रे का अस्तित्ववाद एवं उसकी विशेषताओं का ज्ञान प्राप्त होगा।
- *बहुसंस्कृतिवाद का आलोचनात्मक एवं विश्लेषणात्मक अध्ययन करेंगे।*

कक्षा– **M.A. III Semester**

विषय– **India in World Affairs**

- *अन्तर्राष्ट्रीय सम्बन्ध की विशेषताओं के विषय में जानेंगे।*
- तृतीय विश्व की वैश्विक संदर्भ में भूमिका का ज्ञान प्राप्त करना सार्थक होगा।
- संयुक्त राष्ट्र संघ की संरचना का ज्ञान प्राप्त होगा।
- अन्तर्राष्ट्रीय न्यायालय के संगठन का ज्ञान प्राप्त होगा।
- अन्तर्राष्ट्रीय संगठनों की भूमिका का ज्ञान प्राप्त होगा।

अध्यक्ष
राज० स्नातकोत्तर महाविद्यालय
अजमेर (राजस्थान)

प्रभारी राजनीति विज्ञान विभाग
राज० स्ना० महा० अजमेर (राजस्थान)

Department of Political Science

Program Outcome

After Post Graduate and Under Graduate program having Political Science as a subject the students will be acquainted with. . .

Basics of Political Science

Historical Background of Political Science.

Research and Statistical Concepts

Social and Applied part of Political Science

Department of Political Science

Course Outcome

The course of Political Science for Graduation and Post Graduation level is so designed as to able the students to develop a complete understanding of the basics of the subject,

It theoretical.

Department of Political Science

Program Specific Outcome

Political Science is a subject that helps the individual to understand Political views fundamental rights, duty. Political Science helps the individual to understand international organisations, international politics, human rights, and Political system of India local self government etc.

अध्यक्ष राजनीति विज्ञान विभाग
राज. डूंग. कॉ. रामगढ़ (शेखावाटी)

P.N.G. Government P.G. College, Ramnagar
Department of English

PROGRAM SPECIFIC OUTCOMES (UG)

B.A. Semester I[st]

Paper I[st]: Prose till 19[th] Century

On completion of the course, students are able to:

- Get acquainted with pioneers of essay writing in English Literature.
- Critically understand its evolution and various types.
- Understand the role of prose writing in English Literature.
- Get the critical idea of the foundation of modern prose writing.

Paper II[nd]: Drama: Shakespearean Comedy (Twelfth Night)

On completion of the course, students are able to:

- Understand the traditional concept of comedy and its evolution in Shakespearean drama.
- Understand the artistic and aesthetic features of Shakespearean comedy through Twelfth Night.
- Understand the essence of Elizabethan English and diction.

B.A. Semester II[nd]

Paper I[st]: Poetry till 18[th] Century

On completion of the course, students are able to:

- Get acquainted to poetry of eras between Elizabethan and Pre-romanticism.
- Understanding Shakespearean sonnets and its aesthetic and artistic features.
- Understanding Metaphysical Poetry through John Donne and its aesthetic and artistic features.
- Understanding Miltonic poetry and its artistic and aesthetic features.
- Understanding Alexander Pope's poetry and its artistic and aesthetic features.
- Understanding Transition poets through Thomas Gray and introduction to Romanticism through William Blake.

Paper II[nd]: Drama: Shakespearean Tragedy (Macbeth)

On completion of the course, students are able to:

- Understand the traditional concept of tragedy and its evolution in Shakespearean drama.
- Understand the artistic and aesthetic features of Shakespearean tragedy through Macbeth.
- Understand the essence of Elizabethan English and diction.

B.A. Semester III[rd]

Paper I[st]: 19[th] Century Poetry

On completion of the course, students are able to:

- Get acquainted to poetry of Romantic era and subsequent Victorian poetry.
- Understanding Wordsworth's poetry and its aesthetic and artistic features.
- Understanding poetry of P. B. Shelley and its aesthetic and artistic features.
- Understanding Miltonic poetry and its artistic and aesthetic features.
- Understanding Keatsian poetry and its artistic and aesthetic features.
- Understanding Robert Browning's poetry and its artistic and aesthetic features.
- Understanding Tennyson's poetry and its artistic and aesthetic features.
- Understanding Matthew Arnold's poetry and its artistic and aesthetic features.

Paper II[nd]: Fiction 19[th] Century: The Mayor of Casterbridge by Thomas Hardy.

On completion of the course, students are able to:

- Understanding 19[th] century novels.
- Understanding Realism in 19[th] century literature.
- Understanding artistic and aesthetic features of Hardy's novels through The Mayor of Casterbridge.
- Understanding evolution of characters in 19[th] century literature.

B.A. Semester IV[th]

Paper I[st]: Modern English Prose

On completion of the course, students are able to:

- Understand Modern Prose writing.
- Understand its evolution from early English prose.
- Get critical understanding of thematic change in modern prose.

Paper II[nd]: Indian English Fiction: Guide by R. K. Narayan

On completion of the course, students are able to:

- Understand the characteristics of post-independence Indian English novel.
- Understand the regional portrayal of rural Indian setting in English language.
- Understand the artistic and aesthetic features of R. K. Narayan's novels.
- Understand the characteristic turn of the portrayal of an Indian woman in Indian literature.

B.A. V[th] Semester

Paper I[st]: 20[th] Century Poetry

On completion of the course, students are able to:

- Understand Modernism and Modernistic poetry.
- Understand Symbolism in early 20th century poetry.
- Understand the evolution of English verse from metrical to flexible.
- Understand the social image and essence of England through poetry.

Paper IInd: Drama of Ideas: Arms and the Man by G. B. Shaw

- On completion of the course, students are able to:
- Understand the turn dramas took at the end of 19th century.
- Understand aesthetic and artistic qualities of G. B. Shaw

B.A. Semester VIth

Paper Ist: American and Indian English Poetry

On completion of the course, students are able to:

- Understand the characteristics of American Poetry.
- Understand the characteristics of Indian Poetry in English.
- Understand the difference between American and British Poetry.
- Understand the essence of Indian Poetry in English and its uniqueness in comparison with British and American Poetry.

Course Specific Outcomes (UG)

B.A. Semester Ist

On completion of the semester the students are able to:

- Understand the structural and thematic evolution of prose till 19th century.
- Understand the impact of prose writing in English literature till 19th century.
- Understand Shakespearean Comedy and its salient features.
- Understand artistic and aesthetic qualities of Shakespearean Drama.

B.A. Semester IInd

On completion of the semester the students are able to:

- Understand the structural and thematic development of English poetry till 18th century.
- Artistic and aesthetic qualities of English Poetry till 18th century.
- Understand Shakespearean Tragedy and its digression from traditional tragedy.
- Understand the turns introduces and popularised by Shakespeare in English Tragedy.

B.A. Semester IIIrd

On completion of the semester the students are able to:

- Understand the thematic and structural turn in English poetry in 19th century.
- Understand how 19th century revives popular Roman and Greek verse structures.
- Understand realism in fiction.
- Understand aesthetic and artistic qualities of 19th century fiction.

B.A. Semester IVth

On completion of the semester the students are able to:

- Understand the thematic and structural turn in English fiction in 20th century.
- Understand the diversification of ideas with the influence of developments in Science and other disciplines like Psychology and Sociology.
- Understand the essence of Indian literature in English after Independence.
- Understand the location of regional India in English.

B.A. Semester Vth

On completion of the semester the students are able to:

- Understand Modernism and its impact on English Poetry.
- Understand Symbolism as a movement through 20th century poetry.
- Understand aesthetic and artistic qualities of 20th century Poetry.
- Understand the thematic and structural turn in English Drama in the last decade of 19th century.
- Understand Shaw's Drama of Ideas.

B.A. Semester VIth

On completion of the semester the students are able to:

- Understand the development of American Identity in English Poetry.
- Understand aesthetic and artistic qualities of American Poetry.
- Understand the essence of Indian Poetry in English and its uniqueness in comparison with British and American Poetry.

Programme Outcome

Bachelor of Arts (English)

On completion of the B.A. programme in English, the students are able to comprehend the general structure of English Literature and its evolution. The student can systematically mark the thematic and structural uniqueness of English literature. The programme allows the students to explore English Literature through a kaleidoscopic set of writers and their works rendering them with a holistic sense of English Literature.

PROGRAM SPECIFIC OUTCOMES (PG)

M.A. Semester Ist

aper Ist: Poetry till 1798

On completion of the course, students are able to:

- Understand Chaucerian Poetry and its contribution to English literature.
- Understand Miltonic Poetry through *Paradise Lost.*
- Understand Metaphysical Poetry through John Donne.
- Understand Neo-classical Poetry through Alexander Pope's *The Rape of the Lock.*
- Understand Transition Poetry through Thomas Gray.
- Get the critical understanding of the evolution and change in English Poetry.
- Understand the social essence in English Poetry before Romanticism.
- Understand structural change in versification with subsequent literary eras.

Paper IInd: English Drama before 20th Century.

On completion of the course, students are able to:

- Understand Elizabethan tragedy and comedy.
- Critical understanding of the difference between Shakespeare's and Marlowe's tragedy.
- Get critical understanding of Shakespearean comedy.
- Understand Restoration drama.
- Get critical understanding of Comedy of Manners.
- Get critical understanding of Wilde's aestheticism and writing style.

Paper IIIrd: English Fiction before 20th Century

On completion of the course, students are able to:

- Understand the birth of novel as prominent genre in literature.
- Understand evolution of narration.
- Understand narratology and theory of fiction.
- Get critical understanding of first novels with *Joseph Andrews.*
- Understand 19th century novels.
- Understand realism in English novel.

Paper IVth: 19th century English Poetry
On completion of the course, students are able to:

- Understand the inception of Romanticism in English poetry.
- Understand the structural and thematic turn in 19th Century English poetry.
- Get critical understanding of Victorian poetry.
- Understand the aesthetic and artistic qualities of Romantic and Victorian poetry.
- Critical and structural understanding of various types of poems like Odes, Dramatic Monologue, Ballad, etc.

M.A. Semester IInd

Paper Ist: Non-fictional Prose till 19th Century

On completion of the course, students are able to:

- Understand the inception of essay writing in English Poetry.
- Get critical understanding of the evolution of essay writing in English literature.
- Understand the influence of Periodicals and journals in English prose.

- Get critical understanding of various types of prose styles.

Paper II[nd]: 20[th] Century English Drama

On completion of the course, students are able to:

- Understand the artistic features of Modern Drama.
- Get critical and structural understanding of Poetic Play.
- Get critical and structural understanding of the Theatre of Absurd.
- Understand the structural and thematic turn in 20[th] century drama.

Paper III[rd]: 20[th] Century English Fiction

On completion of the course, students are able to:

- Understand modernism and its structural elements in 20[th] Century fiction.
- Understand the structural and thematic turn in 20[th] century fiction.
- Get critical understanding of the evolution of characters in modern fiction.
- Understand critically the influence of new inventions and discoveries in Science and philosophical and conceptual developments in other disciplines like Psychology and Sociology in 20[th] century fiction.

Paper IV[th]: 20[th] Century English Poetry

On completion of the course, students are able to:

- Understand Modernism in English Poetry.
- Understand Symbolism in English Poetry.
- Understand the evolution of verse from metrical to flexible in 20[th] Century poetry.
- Understand the thematic and structural turn in 20[th] Century poetry.

M.A. Semester III[rd]

Paper I[st]: Literary Criticism and Theory till 19[th] Century

On completion of the course, students are able to:

- Understand Aristotelian concepts of Tragedy, Comedy and Epic.
- Understand Longinus' concept of Sublimity.
- Understanding theories and critical concepts of Indian Poetics.
- Understanding Wordsworth's idea of poetry through Preface to Lyrical Ballads.
- Understanding Coleridge's idea of rustic poetry and his take on Wordsworth's (and his own) idea in Lyrical Ballads.

Paper II[nd]: 20[th] Century Non-Fictional Prose

On completion of the course, students are able to:

- Understand the thematic change in modern non-fictional prose.
- Understand the kaleidoscopic themes present in 20[th] Century prose reflecting the diversity of intellectual existence of the time.
- Understand the influence of conceptual and philosophical development of other disciplines like Psychology, Sociology, etc. in modern non-fictional prose.
- Understand the linguistic impact of prose on society in socio-political context.

Paper III[rd]: Indian Literature in English till 1960

On completion of the course, students are able to:

- Understand the inception of Indian Literature in English.
- Understand the thematic location of Indian essence in Indian Literature in English.
- Understand regional representation in Indian Literature in English.
- Understand influence of Pre-Independent Indian Socio-economic situation in Indian Literature in English.

Paper IVth: Option 1: American Literature till second World War

On completion of the course, students are able to:

- Understand the thematic and structural essence of 19th Century American poetry.
- Understand the artistic and aesthetic features of American Poetry.
- Understand the evolution of American Poetry from 19th century to mid-20th Century.
- Understand the difference between British and American Poetry.
- Understand the colloquial nature of American Poetry.

Paper IVth: Option 2: Pre-independence Indian Literature in Translation

On completion of the course, students are able to:

- Understand the thematic essence of Indian didactic poetry through *Kabir*.
- Understand the thematic essence of Urdu poetry through *Ghalib*.
- Understand the thematic essence of Urdu fiction through *Umrao Jaan*.
- Understand Tagore's philosophy of life and society through *Gora*.
- Understand the realism of Premchand through *Godan*.

M.A. Semester IVth

Paper Ist: 20th century Literary Criticism and Theory

On completion of the course, students are able to:

- Understand the conceptual change in modern literary theory.
- Understand the critical concepts and theories introduced by New Critics.
- Understand Structuralism and its foundation in Saussure's linguistics.
- Understand modern Feminist Criticism.
- Understand major Post-colonial theories through Said's *Orientalism*.

Paper IInd: Indian Literature in English after 1960

On completion of the course, students are able to:

- Understand the change in Indian literature in English post-independence.
- Understanding the regional location of Indian essence in Indian Literature in English.
- Understand regional representation in Indian Literature in English.
- Understand structural and thematic essence of Indian Drama in English through *Tughlaq*.
- Understand structural and thematic essence of Indian Fiction in English through *The Man Eater of Malgudi*.

Paper IIIrd: Option 1: Post-second World War American Literature

On completion of the course, students are able to:

- Understand the diversification of themes and structure in American literature after second World war.
- Understand realism in American Drama through *Death of a Salesman* and *Who's Afraid of Virginia Woolf*.
- Understand Confessional Poetry through poems of Sylvia Plath.

- Understand American essence in fiction through *The Catcher in the Rye.*

Paper III[rd]: Option 2: Post-independence Indian Literature in Translation

On completion of the course, students are able to:

- Understand the diversification of themes in Post-Independence Indian Literature in English.
- Understand western influence in Indian dramas through *Silence, the Court is in Session.*
- Understand the regional location of Indian essence in Indian fiction.
- Understand nature and structure of Indian satire and allegory.
- Understand *Partition* as one of the major themes in post-independence Indian Literature.

Paper III[rd]: Option 3: Applied Linguistics and Stylistics

On completion of the course, students are able to:

- Understand the concepts of morpheme and allomorph.
- Understand word formation (affixation; acronym; compounding; blending; clipping)
- Understand the basics of Stylistics.
- Understand metres, rhythm and versification in poetry.
- Understand various figures of Speech.
- Understand phonemic transcription of words and sentences.

Paper IV[th]: Viva-Voce

Course Specific Outcomes (PG)

M.A. Semester I[st]

On completion of the semester the students are able to:

- Understand structural and thematic development of English Poetry till 1798.
- Understand the evolution of English drama before 20[th] century.
- Understand the inception and evolution of English novel before 20[th] century.
- Structural and thematic turn in English Poetry in 19[th] century.

M.A. Semester II[nd]

On completion of the semester the students are able to:

- Understand the structural and thematic development of non-fictional English prose till 19[th] century.
- Understand the thematic and structural turn in English Drama in 20[th] century.
- Understandthe thematic and structural turn in English Fiction in 20[th] century.
- Understand the thematic and structural turn in English poetry in 20[th] century.
- Understand the artistic and aesthetic qualities of 20[th] century literature.

M.A. Semester III[rd]

On completion of the semester the students are able to:

- Understand the evolution of literary criticism and theory till 19[th] century.
- Understand the thematic and structural turn in English non-fictional prose in 20[th] century.
- Understand the essence of Indian literature in English before 1960.

- **Understand aesthetic and artistic qualities (structural and thematic) of American literature till second world war.
- **Understand aesthetic and artistic qualities (structural and thematic) of Indian Literature in Translation before Independence.
- **Understand general concepts of Linguistics and Phonetics.

Note: The double asterisked mark the paper that are optional.

M.A. Semester IVth

On completion of the semester the students are able to:

- Understand modern literary criticism.
- Understand structural(narrative) and thematic change in modern literature through 20th century literary criticism and theory.
- Understand aesthetic and artistic qualities (structural and thematic) of Indian Literature in English after 1960.
- **Understand aesthetic and artistic qualities (structural and thematic) of American literature post second world war.
- **Understand aesthetic and artistic qualities (structural and thematic) of Indian Literature in Translation Post-Independence.
- **Understand the relation between linguistics and Literary criticism through Stylistics.

Note: The double asterisked mark the paper that are optional.

<u>Programme Outcome</u>

Master of Arts (English)

The Master's programme in English is a meticulously woven course which makes the student cover the various dimensions of Literature in English. Along with British literature, the programme allows the students to explore American Literature as well as Indian Literature in English. It also makes the students comprehend the essence of Indian regional literature through translation. The programme also makes the student understand the inception and evolution of Literary Criticism and Theories. The programme also enlightens the students about General and Applied Linguistics along with Stylistics bridging Literary Criticism and Linguistics.

Dept. of English

B.A. ECONOMICS

Program Outcome:

The under-graduate program in Economics is designed with the objective of making students understand the concepts of Economic Theories and theories of Indian and Uttarakhand economy. The students become able to compete in the job oriented entrance examination associated with Economics. The students should also be able to understand the economic policies of the country and be prepared for further higher studies in the subject.

Program Specific Outcome

B.A. 1st Year

→ Basic knowledge of theories of micro economics

→ Quantitative ability related to economics

B.A. 2nd Year

→ Basic knowledge about principles of macro economics and relation between Govt. and the general public

→ Importance of money in our life and understand basic characteristics about international trade

B.A. 3rd Year

→ Knowledge of issues of Indian economy

→ Deep knowledge about economists and their thoughts on economics

COURSE OUTCOME

B.A. 1st Semester

Paper 1-

- Definition, Nature and Scope of Economics
- Understand the basic theory of demand and supply
- Understand the theory of production and its field for practical life
- Cost and Revenue Functions in Economics

Paper 2-

- Nature, Scope of Quantitative Techniques in Economics
- Sampling and Census methods in Quantitative Techniques
- Understand the measures of central tendency, statistical investigation
- Understand the variables, functions and determinant
- Understanding the concept of Matrices

B.A. 2nd Semester

Paper 1-

- Understand the market structure and price determination
- Knowledge of theories of factor pricing
- Theory of rent
- Welfare Economics

Paper 2-

- Able to understand price index numbers and measures of dispersion
- Measures of Dispersion and Variation
- Elementary Integral Calculus
- Solution of Linear Simultaneous Equation with help of Cramer's Rule.

B.A. 3rd Semester

Paper 1-

- Understand the salient features of macro economics and importance of national income
- National Income concept and measurement
- Understand the classical theory of employment
- Keynesian macro economics

Paper 2-

- Understand nature functions and importance of money
- Theories of Quantity of Money
- Understand financial markets and supply and demand for money
- Credit Creation and Credit Control Methods

B.A. 4th Semester

Paper 1-

- To understand the importance of public expenditure and public revenue
- Understand the principles of public debt and deficit financing

Paper 2-

- Understand the nature, scope, importance of international trade
- Able to understand rate of exchange, balance of payments and about various international banks

B.A. 5th Semester

Paper 1-

- Understand the main feature of Indian economy, infrastructure and environmental degradation in India
- Understand the demographic profile of Indian economy.
- Agricultural Structure of India
- Understandunemployment concepts and their trends in Indian economy

Paper 2-

- Economic Thoughts of Merchantilism & Economic Thought of Physiocracy.
- The Classical Tradition – J.B.Say, Adam Smith, Malthus, David Ricardo, John Stuart Mill.
- The Socialists – Jean Charles Leonard Sismondi, St. Simon and The St. Simonians.
- Associationism – Robert Owen, Karl Marx.
- Other Schools of Socialism – Reformism. Fabianism. Syandicalism. Guild Socialism. Christian

- Socialism. Democratic Socialism.
- The Nationalists – Fredrick List.
- Mathematical School – Irving Fisher, Hossen.

B.A. 6th Semester

Paper 1-

- Industrial Development in India
- Economic Planning in India
- Regional economics
- The Economy of Uttarakhand

Paper 2-

- Austrian or The Psychological School – Fredrich Von Weiser, Eugen Von Bohm, Bawerk, Karl Marx
- The Institutional Economists – Thorsten Vablen, Mitchel.
- Welfare Economics – Pigou, Hobson, J.R.Hicks, Joan Robinson, J.M.Keynes, J.M.Clark.
- Indian Economic Thought – Dadabhai Norouji, Mahadev Ranade, Gandhian Economics, Gokhle,J.K.Mehta, Jawaharlal Nehru.
- Contribution of Nobel Economist – Amartya Kumar Sen, Samuelson.

MA ECONOMICS

PROGRAM OUTCOME

The Post-graduate program in Economics is designed by the Kumaon University, Nainital. The students undergoing the program will develop an ability to understand the Advanced Economic Theories and their application in Indian Economy and at the International scenario. The students become capable for continuing higher education and Research in Economics.

PROGRAM SPECIFIC OUTCOMES

M.A. 1st Year

→ Complete knowledge of various principles about market, consumer behaviors and economic stabilization

→ Vast knowledge of quantitative theories in economics

→ Understanding the theories of Public Finance and the relation between the Govt. and public

→ Knowledge of main features of Indian economy

M.A. 2nd Year

→ Advanced knowledge about macro Economic theories

→ Vast knowledge about Theories of international trade

→ Knowledge about various Development and Growth models

→ Knowledge of various issues of Indian agriculture

COURSE OUTCOMES

M.A. 1st Semester

Paper 1-

- The Concept of Equilibrium; Economic Model- Nature, Uses and Limitations
- Consumer Behaviour-Cardinal Utility Analysis; Indifference Curve Analysis; Revealed Preference Analysis; Elasticity of Demand; Consumer's Surplus; Attribute Theory of Demand; Consumer Behaviour Under Uncertainty.
- Theory of Production - Returns to a Variable Factor; Isoquant Analysis, Production Function with Two Variable Inputs; Returns to Scale; Cobb-Douglas, CES Production Function; Theory of cost in short and long Period.
- Condition for Equilibrium of the Firm.
- General Equilibrium- Walrasian Analysis, Edgeworth Box diagram Analysis, Contract curve and Product Transformation curve.

Paper 2-

- Scope, importance and limitations of Quantitative Methods in Modern Economics.
- Theory of Numbers. Equations and their Solutions, Slope and Intercept. Various Types of Functions. Elementary Set Theory.
- Measures of Central Tendency and Dispersion: Mean Deviation.
- Concept of Normal Distributions, Measures of Kurtosis and Skew ness.
- Differentiation of Functions of two or more Variables. Partial Differentiation. Maxima and Minima. Exponential and Logarithmic Functions.
- Elementary Linear Programming – General Formulation of Linear Programs. Optimal Solutions with the help of graph.

Paper 3-

- Meaning, Scope & importance of Public finance and its different theories.
- Theories of Public Expenditure
- Financing of the Fiscal Economy : Structure of Government Income. Principles of Taxation.
- Public Debt : Source, Composition and Ownership of Public Debt. Objectives, Debt Vs Tax, Burden, Effects, Types of Public Debt, Repayment and Debt Management.

Paper 4-

- Characterstics of Under Developed Economics, Developed Vs Under Developed Economies, Salient Features of Indian Economy.
- The Population Growth and Economic Development : Indian Population : size, Growth Trends, Demographic Profile of India
- Policy Issues and Perspectives of Indian Planning , Current Five Years Plan, Planning in Liberalized Economy, Decentralized Planning : Panchayats.
- Employment and Unemployment in India : Employment Trends, Structure, Nature and Estimates of Unemployment, Govt. Policy for Removing Unemployment.
- Problem of Resource Imbalance in India : Regional Imbalances, Infrastructure and Economic Development, Social Infrastructure : Education and Health.
- Poverty in India : Concept of Poverty, Poverty Allevation Programmes, Strategy of Poverty Allevation, MGNREGA, Make in India.

M.A. 2nd Semester

Paper 5-

- Market and Product Pricing- Perfect Competition, Monopoly- Price Discrimination.

- Factor Pricing and Distribution- Marginal Productivity Theory-Controversy and Critical evalution, Product Exhaustion Problem – Wicksteed's, (Wicksell, Walrus and Baron') Solutions ; Pricing of Factors in Competitive and Imperfectly Competitive Markets.
- Collective Bargaining and Wages; Demand and Supply of labour ,Wage Determination; Theories of Rent, interest and Profits.
- Welfare Economics- Pigouvian Welfare Economics,; Pareto Optimality condition; value Judgement. Compensation Principle; Grand Utility Possibility Frontier and Welfare Maximization; Social Welfare Function.

Paper 6-

- Matrices and Vectors
- Elementary Integration
- Meaning, Assumptions and Limitations of Simple Correlation and Regression Analysis.
- Probability : Meaning, Laws of Addition and Multiplication. Random Variable, Census and Sampling
- Index Numbers: Different Types of Index Numbers and their Construction. Criteria of a Good Index Number.

Paper 7-

- Fiscal Policy : Meaning, short and long respective, Objectives of Fiscal Policy in a Developing Economy
- Fiscal Federalism : Basic principles of multi level finance, Fiscal federalism in India
- Indian Tax System: Revenue of Union, States and Local Bodies. Major Taxes in India: Tax Base, Direct and Indirect Taxes, Issue of Taxation of Agriculture, Expenditure Tax, Goods and Service Tax (GST).
- Tax Reforms in India. Non-Tax Revenue sources of the Central, States and Local Bodies.
- Budget preparation, presentation and execution of budget of Union government, Current Union Budget, Trends of Public expenditure and Public Debt.
- Deficit Financing, Types of Deficit Revenue Deficit, Primary Deficit, Budgetary Deficit and Fiscal Deficit, Fiscal Sector reforms in India, Reports of last Finance Commission.

Paper 8-

- Growth and Productivity Trends in Indian Agriculture, Land Reforms, Green Revolution in India.WTO and Indian Agriculture.
- Agricultural Price and Price Policy: Trends in Agricultural Prices, Agricultural Price Policy in India, Evaluation of Government's Agricultural Price Policy.
- Agricultural Marketing: Government Measures to Improve the System of Agricultural Marketing.
- Status of Industries at time of Independence, The Industrial Development during Planning Period, Assessment of Industrial Growth, Problems of Industrial Growth.
- Difference between Public and Private Sector, Role of Public Sector Enterprises (PSEs), Growth of Public Sector, Performance of Public Sector Enterprises, Reasons for Poor Performance of PSEs
- Industrial Policy – Review of Industrial Policy Prior 1991, New Industrial Policy 1991.
- Small Scale and Cottage Industries: definition, Role, Performance of Small Scale Industries in India. Govt. Policy for Small Scale and Cottage Industry. Privatization and Public Sector Enterprises – Meaning and Rationale of Privatization, Method of Privatization, Disinvestment.
- Role of "Service Sector" in Indian Economy: Main Features of Service sector, Role in GDP in Service Sector.
- The origin of Economic Crisis in the early 1990s. Economic Reforms in India, Macroeconomic Stabilazitation, Structural Reforms, Globalization in India, Globalization and Its Impact in the Economy.

M.A. 3rd Semester

Paper 9-

- National Income and Related Concepts. Circular flow of Income. Measurement of National Income. Problems in the Measurement of National Income.
- Types of Macroeconomics Say's Law of Market, Determination of the level of output and Employment, Criticism of Say's Law, Classical, Keynesian Economics.
- Post-Keynesian Approaches, Theory of Output and Employment. Consumption Function, Saving and Investment Function
- Keynesian approach, Keynesian Psychological Law of Consumption, Paradox of Thrift, Friedman's approach. Investment Function- Determinants of Investment. Concept of Multiplier, Acceleration Principle.

Paper 10-

- The Theories of International Trade
- Gains from Trade, and Terms of Trade
- Trade Policy-Free Trade and Protectionism Methods of Trade Interventions:- Tariffs, Import Quota and Non-Tariff Barriers, Optimum and Effective tariff rates.
- Economic Effects of Tariffs and Non-tariff Barriers. Theory of custom Union, Trade under Imperfect Competition. International Economic Integration, GATT/Globalization and New International Economic order under WTO.

Paper 11-

- Meaning and Measurement of Economic Growth and Development. Characteristics of Under-Development.
- Poverty – Absolute and Relative. Measuring Development and Development Gap. Human Development Index and Other Indices of Development and Quality of Life. Theory of Demographic Transition.
- Classical Theory-- Smith, Ricardo, Malthus. Marxian Theory of Capitalist Development. Schumpeterian View of Dynamic Evolution of Economy. Structural Analysis of Development. Development in Historical Perspective - The Rostow's Stages of Growth.
- Partial Theories of Underdevelopment: Vicious Circle Theory. Social and Technological Dualism. Models of a Dual Economy: Nurkse, Lewis. Theory of the Big Push. Balanced and Unbalanced Growth. Critical Minimum Effort Thesis and Theory of Low Level Equilibrium Trap.

Paper 12-

- Nature and Scope of Agricultural and Rural Economics. Role of Agriculture in Economic Development. Interrelationship between Agriculture and Industry. Interaction between Agriculture and Rest of the Economy.. Diversification of Agriculture.
- Agriculture and Allied Activities. Livestock Resources, White Revolution. Fishery and Poultry Development. Blue Revolution. Forestry, Horticulture and Floriculture. Rural Industrialisation Agro-based Industries. The Institutional and Infrastructural Development for Agriculture Growth.
- Agricultural Production – Resource Use and Efficiency.. : Agricultural Growth. Demand and Supply and Allocation of Basic Inputs—Labour, Land, Irrigation, Fertiliser, HYV Seeds, Form of farming, Organic Farming, Sustainable Farming. Livestock Energy, Machinery and Equipment. Factor Combination and Resource Substitution. Cost and Supply Curves. Farm Size - Returns to Scale and Productivity, Farm Budgeting and Cost Concepts. Technology in Agriculture – Traditional Techniques and Practices. Technological Change and Agriculture. Distribution of Gains from Technological Change.
- Green Revolution. Sustainable Agriculture. Emerging Trends in Agricultural Technology. Dry Land Farming. Use of Bio-technology. Economics of Small Farmers.
- Principles of Land Utilisation. Land Distribution – Structure and Trends. Land Tenures and Farming Systems – Peasant, Capitalist, Collective and State Farming. Tenancy and Crop Sharing – Forms,

Incidence and Effects. Land Reforms in India -Performance. Women and Land Reforms. Problems of Marginal and Small Farmers.

M.A. 4th Semester

Paper 13-

- Supply of Money-Different Concepts, High Powered Money, Money Multiplier, Determinants of Money supply.
- Demand for Money—Classical view of Demand for Money, Total Demand for Money, Post Keynsian Approach, Baumol's Approach, Fisher and Cambridge Versions. Keynesian Approach. Approach of Friedman, Patkinson. Value of Money and It's measurements.
- Theory of Interest - Classical, Neo-Classical, Keynesian. The Modern Theory of Interest. IS & LM Functions : General Equilibrium of Product and Money Markets, Extensions of IS-LM Models.
- Keynes' Theory of Money and Prices. Keynesians versus Monetarism. Theories of Inflation. Effects and Control of Inflation. Inflationary and Deflationary Gaps. Phillips Curve.
- Credit Creation by Commercial Banks, Central Banking -- Functions and Role. Reserve Bank of India - Role and Performance.

Paper 14-

- Meaning and Components of the Balance of Payments. Equilibrium and Disequilibria in the Balance of Payments. The Balance of Payments Accounts and the Foreign Exchange Market. Types of Disequilibrium, Causes, and Correction of a Disequilibria in the Balance of Payments.
- Devaluations- Elasticity Approach and Income Absorption Approach, Adjustment Mechanism: Monetary Policy. Foreign Trade Multiplier Fixed and Flexible Exchange Rates. Floating Exchange Rates, Exchange Control.
- Forms of Economic Cooperation. Emergence of Trading Blocks. Effects of a Customs Union and Free Trade Areas. Regionalism- SAARC/SAPTA, ASEAN, EU, BRICS. Multilateralism-WTO(TRIPS & TRIMS, Patent, GATS, Subsidies), UNCTAD, I.M.F., I.B.R.D and A.D.B. with Special Reference to India. International Liquidity, Special Drawing Rights (SDRs).
- Current issues of Emerging International Monetary System.
- **Trade Problems and Trade Policies of India since1991-** Recent Changes in the Direction and Composition of Foreign Trade of India. Trade Reforms since 1991 and impact on Indian Economy. Problems of India's Foreign Debt. International Investment in India: Foreign Direct Investment FDI, Issues and Policies. Recent Export and Import Policies of India – India's Foreign Trade : Trends & Trade Policies,. Role of Multinational Enterprises in India.

Paper 15-

- Conceptual Framework and Methodology of Modern Growth Theories. The Harrod- Domar Growth Model. Neo-Classical Growth Theory. Growth Models of Solow, Meade and Swan. Cambridge Theories of Growth- Joan Robinson, Kaldor, Kahn.
- Models of Technical Progress – Hicks, Harrod. Optimal Savings and Ramsay's Rule. Golden Rule of Accumulation. Money in Economic Growth . Endogenous Growth.
- Development Policies and Perspectives: Role of Economic and Non-Economic Factors. Sectoral Priorities and Development Policies. Environment and Development.
- International Trade, Aid, Finance in Development. Technology Transfer and Multinational Corporations. Problems of Unemployment and Poverty in Developing Economies.

Paper 16-

- Agricultural Finance in India – Importance, Types of Requirements, Sources ; Institutional and Non-institutional. Existing Credit Delivery System (Multi Agency Approach). Reorganisation of Rural Credit – Cooperatives, Commercial Banks, Regional Rural Banks. Role of NABARD.
- Cooperative Movement in India.- Agricultural and allied Cooperation in India. Problems and Prospects of Cooperative Institutions.

- Marketing and State Policy. Agricultural Markets and Marketing Efficiency – Marketing Functions and Costs. Market Structure and Imperfections. Regulated Markets. Marketable Surplus. Behaviour of Agricultural Prices – Cobweb Model. Warehousing. Taxation and Crop Insurance. Agricultural Price Policy – Objectives, Instruments and Evaluation. Food Security in India. Public Distribution System.
- Recent Trends in Agricultural Growth in India. Inter-regional Variations in Growth of agricultural Output and Productivity. Cropping Pattern Role of Subsidies.
- International Trade in Agricultural Commodities. Commodity Agreements Issues in Liberalisation of Domestic and International Trade in Agriculture. Role of MNCs. WTO and Indian Agriculture.

Agarwal

(Dr. A. Agarwal)
Head, Dept. of Eco

Department of Psychology

Course Outcome : B.A. Psychology

PSYCHOLOGY

Semester-I

Paper-I **Basic Psychological Processes-I**

On Completion of the Course, students are able to

1-Understand the Definition, goal and scope of Psychology.

2- Understand the different approaches of Psychology.

3- Understand the brief History of Psychology.

4- Understand the various study methods in Psychology.

5. Understand the Biological basis of Behavior.

6. Understand the Meaning and characteristics of Sensation and its types.

7- Understand about perception, laws and theories of Perception.

8. Understand about attention, fluctuations and its types.

Course Outcome : B.A. Psychology

PSYCHOLOGY

Semester- I

Paper-II **Experimental Method**

On Completion of the Course, students are able to

1-Understand the nature of science and scientific method.

2- Know the steps involved in Experimentation.

3-Understand about research problems and its sources.

4- Understand about Hypothesis and its types.

5. Know about variables and its types.

6. Know the methods of controlling variables.

7- Understand the meaning and purpose of statistics.

8. Understand the differences between discrete and continuous variables.

PRACTICAL

Semester-I

On Completion of the Course, students are able to

1-Understand the Bilateral transfer of learning.

2- Understand about maze learning..

3-Understand about influence of set on perception.

4- Understand about effect of knowledge of results on performance. .

5. Know about substitution learning.

6. Know about retroactive inhibition.

Course Outcome: B.A. Psychology

PSYCHOLOGY

Semester- II

Paper-1 **Basic Psychological Processes-2**

On Completion of the Course, students are able to

1-Understand the nature of learning and theories of learning.

2- Understand the theories of conditioning.

3-know about Memory and its types.

4- Understand about forgetting and Zeigarnik effect.

5. Know about Motivation and theories of motivation.

6. Understand about emotion and its theories.

7- Understand about intelligence and its types.

8. Understand the concept of I.Q and types of intelligence tests.

Course Outcome : B.A. Psychology

PSYCHOLOGY

Semester-II

Paper-2 **Psychological Statistics**

On Completion of the Course, students are able to

1-Understand about frequency distribution.

2- Understand about graphical representation of data.

3- Know about the computation and utility of central tendency (Mean, Median and Mode).

4-know about the meaning, computation and utility of measure of variability.

5- Understand about the concept of correlation.

6. Know about the linear and non- linear correlation.

7. Understand the concept and computation of Pearson's Product moment correlation.

8- Understand the concept and computation of Spearman's Rank order correlation.

Course Outcome :B.A. Psychology

PSYCHOLOGY

Semester-II

PRACTICAL

On Completion of the Course, students are able to

1-Understand about free association.

2- Understand about memory span for digit/ words.

3- Understand about verbal test of intelligence.

4- Understand about performance test of intelligence.

5- Understand about Short term memory / Long term Memory.

6. Know about reaction time.

Course Outcome : B.A. Psychology

PSYCHOLOGY

Semester-III

Paper – I **Psychopathology-I**

On Completion of the Course, students are able to understand:

1. The concept of normality and abnormality and Classification of mental disorders.
2. Signs, symptoms and syndromes of mental Illness.
3. Causes of abnormal behaviour: biological, psychological, social, and cultural factors.
4. Psychological models of psychopathology.
5. Symptoms, types, etiology and treatment of Anxiety, Phobia, Obsessive-compulsive disorder and generalized anxiety disorders.

Course Outcome : B.A. Psychology

PSYCHOLOGY

Semester-III

Paper – II ***Social Psychology-I***

On Completion of the Course, students are able to understand:

1. Nature and methods of studying social behaviour: Observation, Experimental, Field study, Survey, and Sociometry.
2. Social Perception: Perceiving others: forming impression, Role of non-verbal cues, Group stereotypes , Primacy and Recency effects, Attribution and causality.
3. Perceiving Groups: Prejudice, Stereotypes, and Conflicts: Sources, dynamics and remedial techniques
4. Interpersonal Attraction: Nature, measurement and antecedent conditions of Interpersonal attraction.
5. Attitude: Nature , formation and change of attitudes, Measurement of attitudes.

Course Outcome : B.A. Psychology

PSYCHOLOGY

Semester- III Semester

PRACTICAL

On Completion of the Course, students are able to Understand

1. Attitude change
2. Test of aggression
3. Sociometry
4. Social facilitation/conformity
5. Adjustment
6. Anxiety

Course Outcome : B.A. Psychology

Psychology

IV –Semester

Paper – I **Psychopathology-2**

On Completion of the Course, students are able to Understand

1. Conversion and Dissociative disorders.
2. Symptoms, types, etiology, and treatment: Schizophrenia and delusional disorder.
3. Manic episode, Depressive episode, Bipolar affective disorder
4. Paranoid, Schizoid, Antisocial, Borderline, Avoidant, Dependent personality.

Course Outcome :B.A. Psychology

Psychology

IV –Semester

Paper – II **Social Psychology-2**

On Completion of the Course, students are able to Understand

1. Structure, function, and types of groups.
2. Definition, functions and theories of leadership
3. Theoretical perspective of aggression.
4. Determinants: personal, situational, and socio-cultural determinants of helping behavior.
5. Bystander effect.

Course Outcome : B.A. Psychology

Psychology

IV -Semester

PRACTICAL

On Completion of the Course, students are able to Understand

1. S.C.T.
2. Self Disclosure Inventory
3. Stress coping
4. Self-concept
5. Emotional Maturity Scale
6. T.A.T.

Course Outcome : B.A. Psychology

V –Semester

Paper – I **Psychological Measurement**

On Completion of the Course, students are able to Understand

1. Psychological Measurement: Meaning and Levels of measurement.
2. Ranking and attitude scales.
3. Meaning, Characteristics and types of tests.
4. Method of Test Construction

Course Outcome : B.A. Psychology

Psychology

V –Semester

Paper – II **Systems of Psychology-1**

On Completion of the Course, students are able to Understand

1. Contribution of Weber, Fechner, Helmholtz, Galton, William James and Cattell.
2. Contribution of Wundt and Titchner, Criticism of structuralism.
3. Watson's behaviorsim - Characteristics and evaluation.
4. Contribution of Tolman, Guthrie, Hull and Skinner

Course Outcome :B.A. Psychology

Psychology

V – Semester

PRACTICAL

On Completion of the Course, students are able to Understand

1. Projective tests (T.A.T./Rorschach)
2. Job Satisfaction
3. Happiness Scale
4. Paired Comparison
5. Raking/Rating Method
6. Environmental Cognition

Course Outcome : B.A. Psychology

Psychology

VI –Semester

Paper – I **Psychological Statistics**

On Completion of the Course, students are able to Understand

1. Concept of Probability, Characteristics of NPC, Skewness and Kurtosis, Application of NPC.
2. Hypothesis testing and Making inferences.
3. Nature, assumptions of Non- Parametric tests.
4. Types of Non- Parametric tests.

Course Outcome :B.A. Psychology

Psychology

Semester-VI

Paper – II **Systems of Psychology-2**

On Completion of the Course, students are able to Understand

1. Gestalt Psychology
2. Psychoanalysis
3. Neo-Freudian Theory
4. Field Theory of Kurt Lewin and Maslow's Need Hierarchy Theory.

Course Outcome : B.A. Psychology

PRACTICAL

Psychology

Semester-VI

On Completion of the Course, students are able to Understand

1. Method of Field survey and report writing.
2. Mental fatigue
3. Stress Management
4. Religiosity scale
5. Interest Inventory.

Program Specific Outcome
B.A. Psychology

After completing the graduation course of Psychology students will be able to understand-

1. Basics of Psychology
2. Historical Background of Psychology
3. Research and Statistical Concepts of Psychology
4. Psychological disorders
5. Social Concepts in Psychology
6. Applied part of Psychology

6/11/2024

प्राचार्य
स्नातकोत्तर महाविद्यालय
रामदहन (बेतीहाट)

Course Outcome

M.A. Psychology

Semester – I

Paper – I

Psychology of Cognitive and Affective processes

On Completion of the Course, students are able to understand about

1- Perception, Perceptual Process and its approaches.

2- Motivation: Definition, Types of motives and theories of motivation.

3- Emotion: Concept of emotion, Physiological correlates of emotion and theories of emotion

Course Outcome

M.A. Psychology

Semester – I

Paper – II

Social Psychology: Conceptual Issues

On Completion of the Course, students are able to Understand about

1- Present trends in social psychology
2- Theories of Social Psychology
3- Socialization of Motives
4- Social Disadvantages and deprivation
5- Environmental Issues

Course Outcome

M.A. Psychology

Semester – I

Paper – III

Psychological Statistics

On Completion of the Course, students are able to Understand about

1. Measures of Central Tendency, types, computation and applications.
2. Measures of Variability, types. Calculation of Quartile Deviation and its utility.
3. Coefficient of Correlation: Meaning and types of correlation.
4. Calculation of coefficient of correlation by product moment method and ranks methods.
5. Biserial correlation , Point Biserial correlation, Tetrachoric correlation, Phi-coefficient and Contingency coefficient. Partial r and Multiple r.
6. Regression and Prediction: Meaning and nature of regression.

Course Outcome

M.A. Psychology

Semester – I

Paper – IV

Research Methodology-I

On Completion of the Course, students are able to Understand about

1. Scientific Research, Nature and purpose of psychological research. Types of psychological research.
2. Nature , characteristics and types of research problem and hypotheis. Difference between problem and hypothesis.
3. Meaning, nature and characteristics of variables. Different techniques of controlling variables.
4. Nature Purpose and types of research design.

Course Outcome

M.A. Psychology

Semester – I

Practical

On Completion of the Course, students are able to Understand about

1. Perceptual defense/vigilance
2. Temporal perception
3. Phi-phenomenon
4. Emotional maturity scale
5. Need for achievement
6. Person perception
7. Pro-social behaviour
8. Social conformity
9. Cooperation and competition
10. Experiential deprivation

Course Outcome

M.A. Psychology

Semester – II

Paper – I

Psychology of Learning and Memory Processes

On Completion of the Course, students are able to Understand about

1. Conditioning Classical conditioning and Operant conditioning
2. Verbal learning and theories of Learning
3. Memory and its types. Concept and causes of forgetting.
4. Information processing model of memory

Course Outcome

M.A. Psychology

Semester – II

Paper – II

Applied Social Psychology

On Completion of the Course, students are able to Understand about

1. Health and Well-Being.
2. Social Change
3. Conflict
4. Social Psychology and Social Problems

Course Outcome

M.A. Psychology

Semester – II

Paper – III

Applications of Statistics in Psychology

On Completion of the Course, students are able to Understand about

1. Meaning and importance of normal distribution. Properties and applications of N.P.C.
2. Meaning of statistical inference. Computation of t-values. Level of significance.
3. Analysis of Variance
4. Non-parametric test

Course Outcome

M.A. Psychology

Semester – II

Paper – IV

Research Methodology-II

On Completion of the Course, students are able to Understand about

1. Non-experimental Research, difference between experimental and non-experimental research. Types of non- experimental research
2. Meaning, nature and characteristics of cross-cultural research.
3. Meaning and purpose of sampling. Probability and non-probability sampling techniques.

Course Outcome

M.A. Psychology

Semester – II

Practical

On Completion of the Course, students are able to Understand about

1. Serial learning
2. Short-term memory
3. Long-term memory
4. Measurement of PI/RI
5. Zeigarnik effect
6. Attitude change
7. Measurement of stereotypes/prejudice
8. Interpersonal attraction
9. Moral values
10. Effect of success on group cohesiveness

Course Outcome

M.A. Psychology

Semester – III

Paper – I

Conceptual Approaches of Personality

On Completion of the Course, students are able to Understand about

1. Meaning of personality; Theoretical approaches to personality. Methodological viewpoints: Idiographic and Nomothetic approaches.
2. Determinants of Personality and dimensions of Personality
3. Development of Personality. Meaning and nature of self.
4. Methods of Measuring Personality.

Course Outcome

M.A. Psychology

Semester – III

Paper – II

Psychology of Guidance

On Completion of the Course, students are able to Understand about

1. Meaning and definition of guidance, purpose, and basic principles of guidance. Types of guidance. Group guidance.
2. Psychological Basis of Guidance.
3. Areas of Guidance.
4. Techniques of collecting of data for individual and group for counseling and guidance.

Course Outcome

M.A. Psychology

Semester – III

Paper – III

Psychopathology-I

On Completion of the Course, students are able to Understand about

1. Approaches of psychopathology
2. ICD-10 and DSM IV-R
3. Anxiety Disorders
4. Somatoform Psycho-physiological Disorders.

Course Outcome

M.A. Psychology

Semester – III

Paper – IV

Foundation of Clinical psychology

On Completion of the Course, students are able to Understand about

1. Brief history and scope of clinical psychology. Definition and nature of clinical psychology.
2. Perspectives of Clinical Psychology
3. Meaning, nature and types of clinical assessment.
4. Test in Clinical Use WAIS, MMPI, TAT, Rorschach test and Neuropsychological assessment.

Course Outcome

M.A. Psychology
Semester – III

Practical

On Completion of the Course, students are able to Understand about

1. 16 PF (any five factors)
2. Alienation
3. Locus of control
4. Emotional maturity
5. Self-esteem/ self-concept/ Self-efficiency
6. Administration of a test of vocational interest
7. Administration of a test of aptitude
8. Administration of a test of values

Course Outcome

M.A. Psychology
Semester – IV
Paper – I

Theories of Personality

On Completion of the Course, students are able to Understand about

1. Fundamentals of Personality Theory
2. Theoretical Approaches of Personality
3. Techniques of measurement Psychometric and projective techniques
4. Indian Personality Theory, A comparative study of India approach and Western approach of personality.

Course Outcome

M.A. Psychology

Semester – IV

Paper – II

Counseling Psychology

On Completion of the Course, students are able to Understand about

1. Meaning definition and purpose of counseling. Role and functions of counselor.
2. Areas of Counseling
3. Counseling Approaches: Psychoanalytic, Client-centered, Existential, and behavioural
4. Counseling Process
5. Evaluation of Counseling

Course Outcome

M.A. Psychology

Semester – IV

Paper – III

Psychopathology-II

On Completion of the Course, students are able to Understand about

1. Schizophrenia and Delusional Disorders
2. Mood Disorders
3. Personality Disorders
4. Organic Mental Disorder

Course Outcome

M.A. Psychology

Semester – IV

Paper – IV

Psychotherapies

On Completion of the Course, students are able to Understand about

1. Meaning and nature and types of psychotherapy.
2. Psychoanalytic Therapy.
3. Behavior Therapy.
4. Cognitive Behaviour Therapy
5. Humanistic-Existential Therapy

Course Outcome

M.A. Psychology

Semester – IV

Practical

On Completion of the Course, students are able to Understand about

1. WAIS (Performance/ Verbal)
2. MMPI
3. TAT
4. Rorschach
5. Anxiety Scale/ Death Anxiety
6. Depression
7. Reaction to frustration
8. EPQ/ EPI

Program Specific Outcome

M.A. Psychology

After completing the Post graduation course of Psychology students will be able to understand-

1. Basic Concepts of Psychology
2. Contemporary Social issues in Psychology
3. Application of Research and statistics in Psychology
4. Foundations of Clinical Psychology
5. Basics of Guidance and Counseling
6. Classification of Psychological Disorders
7. Meaning and Types of Psychotherapy
8. Fundamentals of Personality
9. Applied part of Psychology

प्राचार्य
श्री - नातकोत्तर महाविद्यालय
रायपुर (छत्तीसगढ़)

Department of Chemistry

P.N.G. Govt.P.G.College Ramnagar, Nainital

Programme Outcomes

PO1 **Knowledge:** Students will demonstrate an understanding of the fundamental principles and concepts of chemistry which include Inorganic, Organic and Physical chemistry along with specific knowledge of spectroscopy, group theory and bio-inorganic, bio-organic and bio-physical in advance courses.

PO2**Theoretical**: Analytical- Students will competently apply this knowledge and analyze chemical systems all around by conceptual understanding of the subject in which they identify the essential aspects of a problem, formulate a strategy for solution and communicate their work clearly.

PO3 **Computational** - Students will use basic computational techniques for modeling chemical systems including those that don't have analytical answers.

PO4 **Experimental** - Students will systematically explore chemical phenomena by setting up experiments, collecting and analyzing data, and interpreting their results.

B.Sc.-First Year (I & II Semester)

Paper-I(Inorganic Chemistry)

On completion of the course, students are able to:

CO1: Understand the structure of atom, quantum numbers, radial and angular wave functions and probability.

CO2: Underst and the Distribution curves, energydiagram, Pauli'sexclusionprinciple, Hund'srule of maximu multiplicity

CO3: Understand the periodic properties.

CO4: Understand the types of chemical bonding'

CO5: Understand the types of redox reaction, balancing redox reaction, computation of equivalent weights and concept of Equivalence

CO6: Understand the Molecularorbitaltheory as applied to diatomic homonuclear/ hetero nuclear inorganic molecules.

CO7: Understand the ionic solid, SCC, BCC, FCC, HCP, and defects in solids.

CO8: Understand the periodic properties and chemical properties of s-block element

CO9: Describe periodic properties and chemical properties of p-block element

CO10: Understand the:General metallurgical processes-concentration ores,calcinations,roasting, smelting, slag &flux. Extraction and refining of Lithium and Beryllium

CO11: Understand the acids and bases concept.

CO12: Understand the coordination chemistry

CO13: Understand the Determination of electrode potential,uses of electrode potentialdata, reactionfeasibility.

CO14: Understand the Chemistry of lanthanides and actinides.

CO15:Understand the Classification and their general characteristics, physical properties of the solvents, reactioninnon-

aqueous solvents-liquid

CO16: Understand the corrosionofmetal.

CO17:Understand the Thermodynamic and kinetic aspects of coordination compounds. Chemistry of Transition Elements(First,SecondandThirdSeries), and chemicaland physical properties of transition metal complexes. Describe Organometallic ccomplexes.

CO18: Understand the Roleof metalions inbiology,essential and traceelementsinbiological systems,

CO19: Understand the Inorganic Polymers of Silicon and Phosphorus. SomeIndustrially Important Inorganic Materials

B.Sc.-First Year (I & II Semester)

B.Sc. Paper-II(Organic Chemistry)

On completion of the course, students are able to:

CO1: Understand the Structureand bonding of compound

CO2: Understand the Mechanismof organicreaction

CO3:Understand the Stereochemistry of organic compounds

CO1: Understand the Structureand bonding of compound

CO2: Understand the Mechanismof organicreaction

CO3:Understand the Stereochemistry of organic compounds

CO4: Understand the the Alkanes , Cycloalkanes, Alkenes, Cycloalkenes,

CO5: Understand the Arenes and Aromaticity

CO6: Explain the Alkyl and Aryl Halides

CO7: Understand the Electromagnetic Spectrum; Absorption, Spectroscopy, NMR Spectroscopy CO8: Understand the Alcohols, Phenols, Ethers and Epoxide, Aldehydes and Ketones Carboxylic Acids and their Derivatives

CO9: Understand the Nitrogen containing Organic Compounds

CO10: Understand the Organic Synthesisvia Enolates

CO11: Understand the Organo-metallic Compounds and Organo- sulphur compounds

CO12: Understand the Heterocyclic compounds and Natural Products

CO13: Understand the Carbohydrates Amino Acids, Peptides,Proteins andNucleic Acids, Fats, Oils and detergents.

CO14: Understand the SyntheticPolymers and Synthetic dyes.

B.Sc.-First Year (I & II Semester)

B.Sc. Paper-III(PhysicalChemistry)

On completion of the course, students are able to:

CO1.: Understand the phenomenon, behaviour of gases and know about difference between real and ideal ga sand there liquefaction.

CO2. Understand the LiquidState: Know about the differences between nsolids, liquid sand gases .Elucidate the physical properties like surface tension,viscosity and refractive index of liquids.

CO3. Understand the Solid State:Define the basic phenomenon of solid state and eterminethe structure of crystalline solid. Know about the structure determination techniques.

CO4. Understand the ColloidalState: Describe the classification, preparation and properties of colloid sinhibition, general application fcolloids.

CO5. Understand the Chemical Kinetics and Catalysis: Explain the required time forreaction completion. The factors like concentration, temperature ,pressure, solvent, light and catalyst influencing the rate of reaction. Elucidate the order of reaction and their halflifetime.

CO6. Understand the Thermodynamics: Know about thermodynamic reaction sinnatural process .Understand the law of thermodynamics and their application in explanation of spontaneity in chemical reactions. Themac roscopic study with the help of thermodynamic parameters.Explainb about heat of reaction and their calculation methods. Evaluation of absolute entropy from heat capacity data.

CO7. Understand the Chemical Equilibrium: Equilibrium study with the help of Le Chatelier'sprinciple.Studyofequilibrium reactions.

CO8. Understand the PhaseEquilibrium: Know abou the meaning of the terms(phase,componentanddegree of freedom) used in phaserule.Nernost thermodynamic equation applied in phasediagram.Explainphase diagram for two Component system.

CO9. Understand the Electrochemistry: Explain there doxreaction with help of electrochemical series. Knowa bout the conductivity ofdifferent electrolyte.Factoraffectingontheelectricaltransport- conduction in metals and electrolytic solutions.Understand the type of cell. Definethe pH and pK a ,determination of pH using hydrogen, quinhydrone and glass electrodesby potentiometric methods.Elucidatethe mechanism of buffer action.

CO10:. Understand the Surface Chemistry:and surface phenomenon of the materials. The adsorption magnitude explain with the help of different isothermodels.KnowaboutPerrin'smethodfordetermination of the Avogadro' snumber.

CO11 :Understand the ElementaryQuantumMechanics: Understand themicros copic properties of atomic constitutional particles. Interpretthe wave function with the help of Compton-effect, de Broglie hypothesis, Heisenberg's uncertainty. principle,operator concept, Hamiltonian operator, Schrödinger wave equation.

CO12: Understand the Spectroscopy, electromagnetic radiations.Know about the principals of different spectroscopy . Deducethe importance of Maxwell-Boltzmann distribution law in spectroscopy.

CO13. : Understand the Photochemistry interaction of radiation with matter and differentiate between thermal and photochemical processes. Deduce thedifferent Laws of photochemistry. Utilization of Jablonski diagramin explain different radiative andnon-radiative decay. Explain quantum yield .Know about energy transferprocess eswithsimple examples.

CO14. Understand the Physical Properties and Molecular Structure: Understand optical properties and their relation with chemical constitutionand polarization. Understand the dipole moment of different chemical species. Know about structure determination of molecules with the help of dipole moment ,in duced dipole moment, measuremen of dipole moment-temperature method and refractivity method, dipole moment.

CO15. Understand the Solutionsand Colligative Properties Deduceideal solution,non-idea lsolutions , osmosis, elevation of boiling point and depression in freezing point.

B.Sc.-Second Year (III & IV Semester)

Paper-I(Inorganic Chemistry)

On completion of the course, students are able to:

CO1: Understand the Chemistry of Transition Elements (First Transition Series).
CO2. Understand the Chemistry of Transition Elements (Second and Third Series)
CO3: Understand the Acids and Bases
CO4: Understand the Coordination Chemistry-I:
CO5: Understand the Paint industry: Constitution, colouring compounds
CO6: Understand the Oxidation and Reduction
CO7: Understand the Chemistry of Lanthanides
CO8: Understand the Chemistry of Actinides
CO9: Understand the Acids and Bases

B.Sc.-Second Year (III & IV Semester)

Paper-II(Organic Chemistry)

On completion of the course, students are able to:
CO1: Understand the Electromagnetic Spectrum: Absorption Spectroscopy
CO2. Understand the Alcohols
CO3: Understand the Phenols
CO4: Understand the Ethers and Epoxides
CO5: Understand the Aldehydes and Ketones
CO6: Understand the Carboxylic Acids and their Derivatives
CO7: Understand the Nitrogen Containing Organic Compounds
CO8: Understand the Organic Synthesis via Enolates

B.Sc.-Second Year (III & IV Semester)

Paper-III(Physical Chemistry)

On completion of the course, students are able to:
CO1: Understand the Thermodynamics II
CO2. Understand the Chemical Equilibrium
CO3: Understand the Phase Equilibrium:
CO4: Understand the Electrochemistry I &II
CO5: Understand the Surface Chemistry

B.Sc.- Third Year (V & VI Semester)

Paper-I(Inorganic Chemistry)

On completion of the course, students are able to:

CO1: Understand the Redox Reactions II

CO2: Understand the Chemistry of Lanthanides

CO3: Understand the Chemistry of Actinides

CO4: Understand the Non Aqueous Solvents

CO5: Understand the Corrosion of metal

CO6: Understand the Hard and Soft Acid-Base Theory

CO7: Understand the Metal-Ligand bonding in transition metal complexes

CO8: Understand the Magnetic Properties of Transition Metal Complexes

CO9: Understand the Electronic Spectra of Transition Metal Complexes

CO10: Understand the Thermodynamic and Kinetic Aspects of Coordination Compounds.

CO11: Understand the Organometallic chemistr

CO12: Understand the Bioinorganic Chemistry

B.Sc.-Third Year (V & VI Semester)

Paper-II(Organic Chemistry)

On completion of the course, students are able to:

CO1: Understand the Carboxylic Acids:

CO2. Understand the Carboxylic acid derivatives:

CO3: Understand the Nitrogen Containing Organic Compounds

CO4: Understand the Organic Synthesis via Enolates

CO5: Understand the Spectroscopy

CO6: Understand the Organo-metallic Compounds

CO7: Understand the Organo-sulphur compounds

CO8: Understand the Hetrocyclic compounds

CO9: Understand the Carbohydrates

CO10: Understand the Amino Acids, Peptides, Proteins and Nucleic Acids

CO11:Understand the Fats, Oils and Detergents

CO12:Understand the Synthetic Polymers

CO13:Understand the Synthetic Dyes

CO14:Understand the Natural Products

Third Year (V & VI Semester)

Paper-III(Physical Chemistry)

On completion of the course, students are able to:

CO1: Understand the Electrochemistry I

CO2. Understand the Electrochemistry II

CO3: Understand the Surface Chemistry

CO4: Understand the Elementary Quantum Mechanics

CO5: Understand the Spectroscopy

CO6: Understand the Rotational spectrum

CO8: Understand the Vibrational spectrum

CO9: Understand the Electronic spectrum

CO10: Understand the Photochemistry

CO11: Understand the Physical Properties and Molecular Structure

CO12: Understand the Solutions and Colligative Properties

CO13: Understand the Thermodynamics III

M.Sc.Course Outcomes

Semester-I

Paper I -Inorganic Chemistry:

At the end of this course, students will be able to know

CO1 Understand the Compounds of Boron, Carbon and Nitrogen with Metals.

CO2 Understand the Metal-Ligand Equilibria in Solution.

CO3 Understand the Metal π-Acid Complexes:

CO4 Understand the Cluster Compounds:

CO5 Understand Polyoxometalates.

C06 Understand:Compounds of Boron, Carbon and Nitrogen with Metals.

CO7 Know the Metal-Ligand Equilibria in Solution.

CO8 Understand The Metal π-Acid Complexes:

CO9 To Understand the Cluster Compounds:

CO10 : Understand Polyoxometalates

Paper-II- Organic Chemistry Semester –

The end of this course, students will be able to know

CO1 Understand the bonding with delocalisation as well as aromatisation.

CO2 Understand the 3D structures as well as stereo chemical changes during the chemical reaction.

CO3 Understand the photochemical and thermal changes during the concerted reaction

CO4 Understand the nucleophilic displacement reaction in the aliphatic compound

CO5 Understand the nucleophilic displacement reaction in the aromatic compound

CO6 Understand the idea about the formation of products with rearranged carbon skeleton

Paper-III- Physical Chemistry-Semester-

the end of this course, students will be able to know

CO1 Understand theLaws of thermodynamic and application of thermodynamics laws.

CO2 To know about general order reactionsand application of chemical dynamics.

CO3 Understand the adsorption, its type and application of adsorption in the formation of charge

oidal particles s well as in the decolouration of the various content like sugar

Paper-IV-GroupTheory and Instrumentation Chemistry-Semester

The end of this course, students will be able to know

CO1 Understand the group theory and its application in different field of chemistry

CO2 Understand the basics of single crystal analysis

CO3 Understand Separation technique in organic Chemistry

CO4 Understand the quantitative method to analysis radioactive compound

Paper V-(A)Biology for Chemist(For Mathematics Students)

CO1 Understand the Cell as Unit of Life and Cell Organelles

CO2 Understand the Cell Membrane and Cell Wall

CO3 Understand the Metabolism .

(B)Understand the Mathematics for Chemist(For Biology Students)

CO1 : Understand the Impart knowledge about the Mathematical Functions

CO2 :Understand .Curve Sketching/Graph and Differentiation

SEMESTER-ll Inorganic Chemistry(Paper-Ist)

At the end of this course, students will be able to knowledge of General Chemistry and its usages .

CO1:Understand the Metal –Ligand Bonding ,Limitations of crystal field theory, molecular orbital theory, octahedral, tetrahedral and square planar complexesπ-bonding and molecular orbital theory

CO2: Understand the Reaction Mechanism of Transition Metals Complexes , Energy profile of a reaction , reactivity of metal complexes , kinetics application of valance bond and crystal field theories

CO3: Understand the Electronic Spectra and Magnetic Properties of Transition Metal Complexes , Spectroscopic ground states correlation , Orgal and Tanabe-Sugano Diagrams for transition metal complexes .

M.Sc Second Semester- Organic Chemistry— (Paper-II)

CO1; Understand the displacement reaction by the electrophilic as well as related concept

CO2; Understand the displacement reaction by the electrophilic in aromatic systems and related concept

CO3; Understand the free radical reaction with mechanism and factor affecting.

CO4; Understand the types of addition reaction and factor affecting

CO5 ;Understand the addition reaction in carbon-hetroatom multiple bond species

CO6: Understand the elimination reaction with related rule

Semester—II - Physical Chemistry- (Paper III)

CO1: Understand the Adsorption , BET equation

CO2: Understand the Debye-Huckel-Onsagar theory , Operators

CO3: Understand the Schrodinger's equation and its application.

CO4: Understand the Gives the idea about types of cell ,their charging and discharging concept

CO5: Understand the some other related concepts Find the probability of electron 1D,2D AND 3D boxesas well as some operators and functions.

Semester—II Paper IV(Spectroscopic Techniques

CO1: Understand the Enormous job opportunities at all level of chemical, phytochemical, pharmaceutical,food products and medical science.

CO2: Understand the Science placements in Research and development in natural product chemistry research

CO3: Understand the Mode of vibrations and group frequencies in IR

CO4: Understand the PQR branche

CO5: Understand the Solvent effect on IR spectra

CO6: Understand the Mossbaures spectra

CO7: Understand the UV visible and Raman Spectra

M.Sc.Semester-III

Paper -I : Solid StateChemistry

Students should know

CO1: Understand the solidstatereactions,crystaldefectsandnon-stoichiometry

CO2: Understand the band theory and its impotances

CO3: Understand the superconductor with different example

CO4: Understand the Theory period of one hours per week

1practical period of week per hour over a semester

Paper –II-Spectroscope Techniques -

CO1: Understand the Mössbauer Spectroscopy:

CO2: Understand the Ultraviolet and Visible Spectroscopy:

CO3: Understand the Molecular Dyssimetry and Chiroptical Properties:

CO4: Understand the Infrared Spectroscopy

CO5: Understand the Raman Spectroscopy

aper III: Chemistry of Biological System-

CO1 Understand the **Bioinorganic Chemistry**:Structure and function of Cell Membrane. Essential and trace metals, role of metal ions in biological processes. Ion Transport through cell membrane. Na+/ k+ Pump.

CO2 Understand the **Bioorganic Chemistry:** Introduction and historical perspective, Nomenclature and classification, extraction, purification and uses of enzymes in food drink industry and clinical therapy.

CO3 Understand the **Biophysical Chemistry:**Forces involved in biopolymer interactions Electrostatic charge and expansion, hydrophobic forces, osmotic pressure, membrane equilibrium. Bioenergetics:.

Paper –IV- Inter disciplinary topics in chemistry

At the end of this course, students will be able to knowledge of General Chemistry and its usages .

CO1: Understand the Impart knowledge about the Green Chemistry-Basic Principales of green

CO2: Understand the chemistry and Nanochemistry(History,Defination and scope of nanomaterials)

CO3: Understand the Data Analysis and Computer.

CO4: Understand the Environmental Chemistry , Concept and scope , composition of atmosphere , photochemical smog , BoD and COD ,.

CO5: Understand the Medicinal Chemistry , Primary knowledge of structure activity relationship ,

Photo Chemistry Semester -3 (Paper-V)

At the end of this course, students will be able to knowledge of General Chemistry and its usages

CO1: Understand the basics ofPhotochemistry

CO2: Understand the different mechanism of isomerisation and addition reaction alkene and diene

CO3: Understand the different path of photochemistry ofCarbonylCompounds

CO4: Understand the photochemistry of AromaticCompounds

M.Sc. -IV- SEMESTER , PAPER-I- (ORGANIC SYNTHESIS)

Students should know

CO1: Understand the various types of the nucleophilic, addition, substitution as well as rearrangement reactions in the different kind of organic reactions.

CO2: Understand the reagents involved in the different types of functional interconversions i.e oxidationand reduction reactions.

CO3: Understand the metellocenes with their formation ,structure and properties. This will also define the benzoid as well as non benzoid aromatic compounds.

CO4: Understand the retrosynthetic route of various chemical reactions.

CO5: Understand the selective reactions at a particular functionality by protecting the other functionally.

CO6: Understand the various types of ring synthesis route

M.Sc. -IV- SEMESTER , Paper II Chemistry of Natural Products and Heterocyclic Compounds

At the end of this course, students will be able to knowledge of General Chemistry and its usages. Students should know

CO1: Understand the Terpenoids and Carotenoids: Classification, nomenclature, occurrence, isolation, general methods of structure determination, isoprene rule.Structure determination,

CO2: Understand the Alkaloids and Steroids: Definition, nomenclature and physiological action, occurrence, isolation, general methods of structure elucidation, classification, role of alkaloids inplants. Structure, stereochemistry, synthesis and biosynthesis of Morphine and Reserpine .

CO3: Understand the Prostaglandins/ Pyrethroids and Rotenones: Occurrence, nomenclature, classification, biogenesis and physiological effects. CO4 Understand the Application of Spectoroscopic Techniques in Structure Elucidation of Natural Products:Two dimensional NMR spectroscopy- COSY, HETCOR,NOESY, DEPT, INEPT , APT and INADEQUATE techniques

CO5: Understand the Heterocyclic Chemistry Nomenclature of Heterocycles / Aromatic and Non-aromatic . Systematic nomenclature (Hantzsch-Widman System) for monocyclic, fused and bridged heterocycles.

CO6 : Understand the Heterocyclic Synthesis/Small Ring Heterocycles .

CO7 : Understand the Three membered and four-membered 37eterocycles-synthesis and reactions of aziridines, oxiranes, thiranes, azetidines , oxetanes and thietanes.

CO8: Understand the Benzo-Fused Five-membered Heterocycles Synthesis and reactions including medicinal applications of benzopyrroles,

CO9 Understand the Six-Membered Heterocycles with Two or More Hetero atoms Synthesis and reactions of pyrylium salts and pyrones and their comparison with pyridinium & thiopyrylium salts. Synthesis and reactions of benzopyrylium salts and coumarins.

Principal
P.N.G. Government P.G. College
Ramnagar (Nainital)

(10)

Department Of Mathematics
P.N.G. Govt.P.G.College Ramnagar, Nainital

COURSE EDUCATIONAL OBJECTIVE

Technical Proficiency:

Provide a degree course, suitable for students of high ability, combining and relating mathematics, statistics, and the social sciences.

Professional Growth:

Prepare students for further study, or for professional and managerial careers, particularly in areas requiring the application of quantitative skills.

Management Skills:

Provide students with knowledge of mathematics, Management and the interaction between the two.

COURSE SPECIFIC OUTCOME

COs describe what students are expected to know or be able to do by the time of graduation from the course. The Course Specific Outcomes of UG in Mathematics are:

At the end of the course, the students will be able to:

- Think in a critical manner.
- Know when there is a need for information, to be able to identify, locate, evaluate, and effectively use that information for the issue or problem at hand.
- Formulate and develop mathematical arguments in a logical manner.
- Acquire good knowledge and understanding in advanced areas of mathematics and statistics, chosen by the student from the given courses.
- Understand, formulate and use quantitative models arising in social science, business and other contexts.

UG Course Outcomes
Mathematics

Semester- I

Course Title: **Elementary Algebra, Matrix and Trigonometry**

Paper- I

Status: Compulsory Course

Course Instructor: 1. Dr Pramod Joshi, Assistant Professor

Dept. of Mathematics,

Mobile: 9412954452

Email: pramod.joshi1975@gmail.com

After Successful completion of this course, students will be able to:

- Distinguish among different numbers and Identify the relation and mapping between different sets.
- Find the roots of the Equation.
- Know the concept of matrix and define different type of matrices.
- Understand different Trigonometrical functions and Trigonometric series and their applications.

Semester- I

Course Title: **Differential Calculus**

Paper- II

Status: Compulsory Course

Course Instructor: 1. Dr. Dhirendra SinghAssistant Professor

Dept. of Mathematics,

Mobile: 9410614935

Email: dsingh94106@gmail.com

After Successful completion of this course, students will be able to:

- Define limit, continuity and differentiability of a function and applications of mean value theorem.
- Find the successive differention and n^{th} differential coefficient of function.
- Expand functions, identify indeterminate forms and solve it.
- Define tangent and normal and their application both in Cartesian and polar form
- Trace the curve and find singular points.
- Understand curvature and asymptotes and find them for a given curve.

Semester- II
Course Title: **Group Theory**
Paper- I
Status: Compulsory Course
Course Instructor: Dr Pramod Joshi, Assistant Professor
Dept. of Mathematics,
Mobile: 9412954452
Email: pramod.joshi1975@gmail.com
After Successful completion of this course, students will be able to:

- Find the cardinality and congruency of the set.
- Define Group and Subgroup and create it.
- Understand the concept of homomorphism, isomorphism and automorphism.
- Understand the concept of Normaliser and center of group.

Semester- II
Course Title: **Integral Calculus**
Paper- II
Course Instructors: 1. Dr Pramod Joshi, Assistant Professor
Mobile: 9412954452
Email: pramod.joshi1975@gmail.com
2. Dr Dhirendra Singh,Assistant Professor
Dept. of Mathematics,
Mobile: 9410614935
Email: dsingh94106@gmail.com
After Successful completion of this course, students will be able to:

- Understand the concept of integral as a limit of sum and properties of definite integrals.
- Know the infinite integrals and differentiation and integration under the integral sign.
- Know about the Beta function. Gamma function, their properties, their relation and evaluation of them.
- Evaluate double integrals and repeated integrals.
- Understand the concept of change of order of integration and Drichlet's Theorem.
- Know quadrature, rectification , volumes and surfaces of solids of revolution.

Semester- II
Course Title: **Analytic Geometry**
Paper- III
Course Instructor: Dr Dhirendra Singh,Assistant Professor
Dept. of Mathematics,
Mobile: 9410614935
Email: dsingh94106@gmail.com
After Successful completion of this course, students will be able to:

- Know about the system of coordinates, curvilinear coordinates;
- Know about definition and equation of sphere, power of a point, tangent plane and radical plane;
- Know about definition and equation of a cone, generators, tangent plane and reciprocal cone;

Semester- III
Course Title: **Advanced Algebra**
Paper- I
Status: Compulsory Course
Course Instructors:1. Dr Pramod Joshi, Assistant Professor
Mobile: 9412954452
Email: pramod.joshi1975@gmail.com
2. Dr Dhirendra Singh,Assistant Professor
Dept. of Mathematics,
Mobile: 9410614935
Email: dsingh94106@gmail.com
After Successful completion of this course, students will be able to:

- Define Ring, Sub ring and their properties.
- Understand the concept of ideal and define different type of ideals.
- Define Integral domain,field and their properties.
- Explain the concept of polynomial rings and their properties.

- Explain the fundamental concepts of advanced algebra and their role in modern mathematics and applied contexts.

Semester- III

Course Title: **Differential Equations**

Paper- II

Course Instructor: Dr Pramod Joshi, Assistant Professor
Dept. of Mathematics,

Mobile: 9412954452

Email: pramod.joshi1975@gmail.com

After Successful completion of this course, students will be able to:

- Understand the concept of order and degree, complete primitive and existence and uniqueness of the solution.
- To solve the differential equations of first order and first degree and the differential equations of first order but not of first degree.
- To understand the concept of trajectory, orthogonal trajectory, and self orthogonal family of curves.
- Find the solution of linear differential equations with constant coefficients and homogeneous differential equations.
- Solve simultaneous, exact, total differential equations and linear differential equations of second order with variable coefficients.
- Solve a differential equation by series solution method and also learn about the simple application of differential equations.

Semester- III

Course Title: **Mechanics**

Paper- III

Course Instructor: Dr Dhirendra Singh,Assistant Professor
Dept. of Mathematics,

Mobile: 9410614935

Email: dsingh94106@gmail.com

After Successful completion of this course, students will be able to:

- Know about the rectilinear motion, simple harmonic motion;
- Understand the concept of kinematics in two dimension, radial and transverse components of velocity;
- Understand the concept of motion in resisting medium, constrained motion, cycloidal motion;
- Know about the central orbits, pedal equation, apse and apsidal distance;
- Understand the concept of coplanar forces and equilibrium of forces in 3-D;
- Know about common catenary and virtual work.

Semester- IV

Course Title: **Vector Spaces and Matrices**

Paper- I

Status: Compulsory Course

Course Instructor: Dr Pramod Joshi, Assistant Professor

Dept. of Mathematics,

Mobile: 9412954452

Email: pramod.joshi1975@gmail.com

After Successful completion of this course, students will be able to:

- Define Vector space, Sub space and their properties.
- Understand the concept of liner dependence and independence, bases and dimensions.
- Explain rank of a matrix and elementary transformation of a matrix.
- Application of matrices to find the solutions of system of linear homogenious equations and system of linear non- homogenious equations.

Semester- IV

Course Title: **Real Analysis**

Paper- II

Course Instructor: Dr Dhirendra Singh,Assistant Professor

Dept. of Mathematics,

Mobile: 9410614935

Email: dsingh94106@gmail.com

After Successful completion of this course, students will be able to:

- Understand the concept of continuity and differentiability of functions;
- Know about Riemann integral and mean value theorem of integral calculus;
- Identify the improper integral and test their convergence;
- Understand the concept of sequence and series, Cauchy's convergence criterion;
- Know about uniform convergence, point wise convergence, test of uniform convergence.
- Know about definition and equation of a cylinder, right circular cylinder and enveloping cylinder;
- Understand the concept of conicoids, central conicoids and conjugate plane.

Semester- IV

Course Title: **Mathematical Methods**

Paper- III

Course Instructors: 1. Dr Pramod Joshi, Assistant Professor
Mobile: 9412954452
Email: pramod.joshi1975@gmail.com
2. Dr Dhirendra Singh,Assistant Professor
Dept. of Mathematics,
Mobile: 9410614935
Email: dsingh94106@gmail.com

After Successful completion of this course, students will be able to:

- Define Kernel, Integral Transform and Laplace Transform;
- Develop Existence theorem, linearity property, Laplace transforms of elementary functions, derivatives, integrals and Periodic functions, Initial and Final- Value theorem;
- Find inverse Laplace Transforms using partial fractions and convolution;
- Solve differential and integro-differential equations using Laplace transforms;
- Evaluate Fourier Complex Transforms, Fourier sine and cosine transforms and Inverse Fourier transform;

Semester- V

Course Title: **Linear Algebra**

Paper- I

Status: Compulsory Course

Course Instructors: Dr Dhirendra Singh,Assistant Professor
Dept. of Mathematics,
Mobile: 9410614935
Email: dsingh94106@gmail.com

After Successful completion of this course, students will be able to:

- Explain the concept of linear transformation, rank, nullity and linear operators.
- Understand algebra of linear transformation.
- Find eigen value and eigen vector of different matrices and its application.
- Explain the concept of linear functionals, dual space and dual basis.
- Explain the fundamental concepts of different bilinear forms.

Semester- V

Course Title: **Complex Analysis**

Paper- II

Course Instructor: Dr Pramod Joshi, Assistant Professor
Dept. of Mathematics,
Mobile: 9412954452
Email: pramod.joshi1975@gmail.com

After Successful completion of this course, students will be able to:

- Understand the concept of complex variable, limit, continuity and differentiability;
- Know about analytic functions, Cauchy's Riemann; equations, harmonic functions;
- Know about complex integration, Cauchy's theorem, poles and singularities;
- Know about residues, the residues theorem, evaluation of improper real integral;
- Know about Liouville's theorem, Taylor's series and Laurent's series.

Semester- V

Course Title: **Functions of several variables and partial differential equations**

Paper- III

Course Instructors: 1. Dr Pramod Joshi, Assistant Professor

Mobile: 9412954452
Email: pramod.joshi1975@gmail.com
2. Dr Dhirendra Singh,Assistant Professor
Dept. of Mathematics,
Mobile: 9410614935
Email: dsingh94106@gmail.com

After Successful completion of this course, students will be able to:

- Understand the concept of limit, continuity and differentiability of functions of several variables.
- Geometrically interpret the partial derivatives and to find derivatives of composite and implicit functions.
- Know Euler's theorem on homogeneous functions, jacobians, harmonic functions and Taylor's expansion of several variables.
- Understand the concept of maxima and minima and can use Lagrange's method of multipliers easily.
- Formulate and solve first order PDE by Charpit's method.
- To classify second order PDE's in two independent variables.
- To find general solution of higher order PDE's with constant coefficients;

Semester- VI

Course Title: **Numerical Methods**

Paper- I

Course Instructors:1. Dr Pramod Joshi, Assistant Professor
Mobile: 9412954452
Email: pramod.joshi1975@gmail.com
2. Dr Dhirendra Singh,Assistant Professor
Dept. of Mathematics,
Mobile: 9410614935
Email: dsingh94106@gmail.com

After Successful completion of this course, students will be able to:

- Find Absolute, Relative, Percentage and general errors involved in calculations;
- Solve Algebraic and transcendental equations by Bisection method, False position method, Newton-Raphson method, Picard's iteration method;
- Check the consistency and inconsistency of system of linear equation;
- Find the solution of linear system of equations by direct and iterative methods;
- Find finite differences, differences of a polynomial and errors in polynomial interpolation;
- Apply Newton's forward and Backward interpolation formula, Gauss, Stirling, Bessel's, Everett's and Lagrange's interpolation formula;
- Numerically differentiate and numerically integrate a function by using a set of tabulated values of function;

Semester- VI

Course Title: **Mathematical Statistics**

Paper- II

Course Instructor: Dr Dhirendra Singh,Assistant Professor
Dept. of Mathematics,
Mobile: 9410614935
Email: dsingh94106@gmail.com

After Successful completion of this course, students will be able to:

- Know about descriptive statistics and exploratory data analysis, measures of central tendency;
- Understand the concept of correlation and regression, scatter diagram and rank correlation coefficient;
- Know about probability, random experiment, sample space, axiom of probability;
- Define the equally likely, mutually exclusive, independent and compound events;
- Know about conditional probability, mathematical expectation, Baye's theorem.

Semester- VI

Course Title: **Operations Research**

Paper- III

Status: Compulsory Course

Course Instructor:-Dr Pramod Joshi, Assistant Professor
Dept. of Mathematics,

Mobile: 9412954452
Email: pramod.joshi1975@gmail.com
After Successful completion of this course, students will be able to:

- Explain the basics of Operations Research.
- Solve linear programming problem by different method like Graphical, Simplex and duality.
- Formulation of transportation problem.
- Finding initial basic feasible solution, test of optimality, degeneracy by MODI method and stepping stone method.
- Find the solution of Assignment problems by Hungarian method.

PG Course Outcomes
Mathematics

PROGRAM EDUCATIONAL OBJECTIVE

Technical Proficiency:

Provide a pg degree course, suitable for students of high ability, combining and relating mathematics, statistics, and the social sciences.

Professional Growth:

Prepare students for further study & research, or for professional and managerial careers, particularly in areas requiring the application of quantitative skills.

Management Skills:

Provide students with knowledge of mathematics, Management and the interaction between the two.

PROGRAMME OUTCOME

POs describe what students are expected to know or be able to do by the time of post-graduation from the programme. The Program Outcomes of PG in Mathematics are:

At the end of the programme, the students will be able to:

- Think in a critical manner.
- Know when there is a need for information, to be able to identify, locate, evaluate, and effectively use that information for the issue or problem at hand.
- Formulate and develop mathematical arguments in a logical manner.
- Acquire good knowledge and understanding in advanced areas of mathematics and statistics, chosen by the student from the given courses.
- Understand, formulate and use quantitative models arising in social science, business and other contexts.

Semester I
Course Title: **Real Analysis**
Paper I
Coursecode: MAT 401 C
Status: compulsory
Course Instructor: Dr Dhirendra Singh,Assistant Professor
Dept. of Mathematics,
Mobile: 9410614935
Email: dsingh94106@gmail.com
After successful completion of this course the students will be able to:
(Knowledge Based)

- Uunderstand the concept of distance function and Metric spaces.
- Use the definitions of convergence as they apply to sequences, series and functions.
- Ddefine a function of several variables and related notions such as simultaneous limit and iterated limits etc.
- Illustrate the effect of uniform convergence on the limit function with respect to continuity, differentially and integrability.
- (Skills)
- Explain the difference between open and closed sets.
- Know the relation between continuity and differentiability.
- To teach the topics learned to newcomers.
- To find sufficient marks in the paper containing topics of real analysis in any competitive examination.

Semester- I
Course Title: **Topology**
Paper- II

Course Code: MAT403C
Status: Compulsory Course
Course Instructor: Dr Pramod Joshi, Assistant Professor
Dept. of Mathematics,
Mobile: 9412954452
Email: pramod.joshi1975@gmail.com

After Successful completion of this course, students will be able to:

(Knowledge based)

- Distinguish among open and closed sets on different topological spaces;
- Know the two fundamental topologies: discrete and indiscrete topologies.
- Identify precisely when a collection of subsets of a given set equipped with a topology forms a topological space;
- Understand when two topological spaces are homeomorphic.
- Identify the concepts of distance between two sets; connectedness, denseness, compactness and Separation axioms.

(Skills)

- Use the concepts of open sets to prove continuity different from the ϵ-δ approach;
- Ability to establish the denseness of a given subset of a space;
- Ability to determine that a given point in a topological space is either a limit point or not for a given subset of a Topological space;
- Using the right language when talking about topological concepts
- Topology uses to analyze complex networks Ex: Social networks, Biological networks, Internet etc.

Semester- I

Course Title: **Differential Geometry and Tensor Calculus**
Paper III
Course code: MAT 405 C
Status: Compulsory
Course Instructor: Dr Pramod Joshi, Assistant Professor
Dept. of Mathematics,
Mobile: 9412954452
Email: pramod.joshi1975@gmail.com

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

(Knowledge Based)

- Define and explain the curves in space and find the equations of tangent, normal, principal normal, binormal, and osculating, normal, rectifying planes.
- Define the different notions concerning the differential Geometry.
- Define n-dimensional real vector space and use the fundamental algebraic operations for tensors.
- (Skills)
- Understand and explain the difference between involutes and evolutes for curves.
- Find caricature and torsion of a curve at a point.
- Teach the topics learned to aspirants of this course.

Semester- I &III

Course Title: **Fluid Mechanics**
Paper- IV
Course Code: MAT 05 E
Status: Elective Course
Course Instructor: Dr Dhirendra Singh,Assistant Professor
Dept. of Mathematics,
Mobile: 9410614935
Email: dsingh94106@gmail.com

After Successful completion of this course, students will be able to:

- Know about the fluids and their properties;
- Understand the concept of continuity;
- Construct the mathematical model for fluid systems;
- Derive the equation of motion for fluid systems ;
- Understand the concept of stream line, velocity potential and stream function;
- Identify the source, sink, doublet, images and vortex in fluid systems;

- Understand the concept of waves, theory of stress and strain.

Semester- I & III

Course Title: **Special Functions**

Paper- V

Course Code: MAT 11 E

Status: Elective Course

Course Instructor: Dr Pramod Joshi, Assistant Professor

Dept. of Mathematics,

Mobile: 9412954452

Email: pramod.joshi1975@gmail.com

After Successful completion of this course, students will be able to:

- Know about the Beta and Gamma functions and their properties;
- Understand the concept of Special functions;
- Find the special functions by solving the particular differential equations;
- Know about the Recurrence Formulae, Orthogonality, Generating functions of different special functions ;
- Do long calculation and manipulation on functions;
- Identify Bessel's, Legendre's, Hermite's and Hypergeometric's functions.

Semester- II

Course Title: **Complex Analysis**

Paper- I

Course Code: MAT 402 C

Status: Compulsory Course

Course Instructor: Dr Pramod Joshi, Assistant Professor

Dept. of Mathematics,

Mobile: 9412954452

Email: pramod.joshi1975@gmail.com

After Successful completion of this course, students will be able to:

- Know about the conformal mapping and their application;
- Understand the concept of linear transformation and bilinear transformation and their application;
- Understand the concept of analytic function, and their representation as power series;
- Know about the Maximum modulus principal and Schwarz lemma;
- Understand the concept of stream line, velocity potential and stream function;
- Identify the Harmonic, Entire and Meromorphic functions;
- Know about Poisson and Jensen's formula.

Semester II

Course Title: **Abstract Algebra**

Paper: II

Course code: MAT 404

Status: compulsory

Course Instructor: Dr Dhirendra Singh,Assistant Professor

Dept. of Mathematics,

Mobile: 9410614935

Email: dsingh94106@gmail.com

After successful completion of the course the students will be able to:

- Define and explain differently notions such as normal and subnormal series, composition series etc.byciting examples.
- Define commutators, Rings, ideals, fields and field extensions.
- (Skills)
- Verify and analyse facts and theorems by taking examples.
- Teach and explain the topics of this course to newcomers of the subject in degree and postgraduate level.

Semester- II

Course Title: **Differential Equations**

Paper- III

Course Code: MAT 406 C

Status: Compulsory Course

Course Instructor: Dr Dhirendra Singh,Assistant Professor

Dept. of Mathematics,

Mobile: 9410614935
Email: dsingh94106@gmail.com
After Successful completion of this course, students will be able to:

- Distinguish ordinary, partial, linear, nonlinear, homogeneous and non homogeneous differential equations;
- Solve ordinary differential equations;
- Formulate, classify and find complete, general and singular integrals of P.D.E.'s of first order;
- The concept of Integral surfaces, Orthogonal surfaces and characteristic curves;
- To solve partial differential equations by Charpit's and Jacobi's method;
- To classify second order PDE's and to reduce PDE's into canonical forms;
- To find general solution of higher order PDE's with constant coefficients;

Semester II & IV
Title of the course: **Advanced Abstract Algebra**
Course code: MAT06E
Paper: V
Status: Elective
Course Instructor: Dr Dhirendra Singh,Assistant Professor
Dept. of Mathematics,
Mobile: 9410614935
Email: dsingh94106@gmail.com
After successful completion of the course the students will be able to:
(Knowledge Based)

- Define notions such as modules over a ring, factorisation of polynomials in extension fields etc.
- To give proof of various theorems such as fundamental theorem of Galois theory, Dedekind's theorem etc.
- (Skills)
- Verify the theorems by taking examples and other results/ facts of the course.
- Take up some topics for research and extend the theory.

Semester- II & IV
Course Title: **Riemannian Geometry**
Paper- IV & V
Course Code: MAT04E
Status: Elective Course
Course Instructor: Dr Pramod Joshi, Assistant Professor
Dept. of Mathematics,
Mobile: 9412954452
Email: pramod.joshi1975@gmail.com
After Successful completion of this course, students will be able to:

- Distinguish between Contravariant vector and covariant vectors within a tensor of any order;
- Know the concept of Riemannian geometry like Riemannian metric, Cristoffel symbols, Differential operators, geodesics Fernet's formula etc.
- Know the concept of Tensor calculus and Carten's structural equations.
- Understand Ricci,s Coefficients of Rotation.
- Identify the concepts of Sub-manifolds and Hyperspaces.

Semester- III
Course Title: **Linear Algebra**
Paper- I
Course Code: MAT 501C
Status: Compulsory Course
Course Instructor: Dr Pramod Joshi, Assistant Professor
Dept. of Mathematics,
Mobile: 9412954452
Email: pramod.joshi1975@gmail.com
After Successful completion of this course, students will be able to:

- Understand the concept of vector space and inner product space;
- Know about orthogonality and Cauchy-Schwarz inequality;
- Identify the adjoint, self adjoint, unitary and normal operators;
- Know about spectral theory for normal operator and polar decomposition of linear operator;
- Understand the concept of eigen vectors and eigen values of a linear operator;

- Know about minimal polynomial and Calcy-Hamilton theorem.

Semester III

Title of the course: **Measure Theory and Integration**

Paper: II

Course code: MAT 503C

Status: Compulsory

Course Instructor: Dr Dhirendra Singh,Assistant Professor

Dept. of Mathematics,

Mobile: 9410614935

Email: dsingh94106@gmail.com

After the successful completion of this course the students will be able to:

(Knowledge Based)

- Define countable and uncountable sets, Cardinality, Boolean rings, set function.
- Know Lebesgue measure of sets, The Lebesgue integral of a bounded function and non negative functions.
- Define the functions of abounded variation, Differentiation of an integral.
- Explain the general Measure and Integration theory.
- (Skills)
- Explain how an infinite set can be countableand uncountable.
- Understand the complicated notions of the course.

Semester- III

Course Title: **Numerical Analysis**

Paper- III

Course Code: MAT 505C

Status: Compulsory Course

Course InstructorsDr Dhirendra Singh,Assistant Professor

Dept. of Mathematics,

Mobile: 9410614935

Email: dsingh94106@gmail.com

After Successful completion of this course, students will be able to:

- Find Absolute, Relative, Percentage and general errors involved in calculations;
- Solve Algebraic and transcendental equation by different methods;
- Check the consistency and inconsistency of system of linear equation;
- Find the solution of linear system of equations by direct and iterative methods;
- Apply different interpolation formula with evenly and unevenly spaced points;
- Numerically differentiate and numerically integrate a function by using a set of tabulated values of function;
- Numerically solve the ordinary and partial differential equations by different methods.

Semester- I &III

Course Title: **Theory of Numbers**

Paper- IV & V

Course Code: MAT03E

Status: Elective Course

Course Instructors: Dr Pramod Joshi, Assistant Professor

Dept. of Mathematics,

Mobile: 9412954452

Email: pramod.joshi1975@gmail.com

After Successful completion of this course, students will be able to:

- Prove results involving divisibility and greatest common divisors;
- Solve systems of linear congruences;
- Find integral solutions to specified linear Diophantine Equations;
- Find the values of different arithmetic functions.
- Apply Euler-Fermat's Theorem to prove relations involving prime numbers;
- Apply the Wilson's theorem.

Semester- I &III

Title of the course: **Mathematical Statistics**

Course code: MAT 01 E

Status: Elective
Course: InstructorDr Dhirendra Singh, Assistant Professor
Dept. of Mathematics,
Mobile: 9410614935
Email: dsingh94106@gmail.com
After successful completion of this course the students will be able to:

(Knowledge Based)

- Know and explain the topics such as Measures of central tendency, Elements of probability, random variatiables etc. Of the descriptive Statistics.
- Define mathematical expectation, moments and cumulantsof a frequency distribution.
- Know the interesting theory of correlation, regression.
- Understand the concept of sampling.
- (Skills)
- Use the principles of statistical reasoning in understanding, analyzing and developing formal arguments.
- Choose appropriate statistical methods and apply them in various data analysis problems.

Semester- IV
Course Title: **Dynamics of Rigid Bodies**
Paper- I
Course Code: MAT 502 C
Status: Compulsory Course
Course Instructors: Dr Dhirendra Singh,Assistant Professor
Dept. of Mathematics,
Mobile: 9410614935
Email: dsingh94106@gmail.com
After Successful completion of this course, students will be able to:

- Explain D' Alembert's principle;
- Understand the concept of rigid body, its motion and forces acting on it;
- Know the motion of the body about the axis of rotation;
- Understand the concept of compound pendulum, simple equivalent pendulum;
- Make the concept about the motion in two dimensions under finite and impulsive forces;
- Know the principle of conservation of momentum and energy;
- Develop Euler's geometrical and dynamical equations;
- Find Lagrange's equations in generalized coordinates;
- Define Hamilton's principle and principle of least action.

Semester- IV
Title of the course: **Functional Analysis**
Paper: II
Course code: MAT 504C
Status: Compulsory
Course Instructor: Dr Dhirendra Singh,Assistant Professor
Dept. of Mathematics,
Mobile: 9410614935
Email: dsingh94106@gmail.com
After successful completion of this course the students will be able to:

(Knowledge Based)

- Understand and define met Richard convergence of sequences, Normed spaces, Banach Spaces, inner product spaces.
- Define Hilbert spaces and different linear operators.
- Understand some principles and theorems concerning different notions of functional analysis.
- (Skills)
- Explain the fundamental concepts of functional analysis and their role in modern mathematics and applied contexts.
- Apply problem -solving using functional analysis techniques applied to diverse situations in Physics, Engineering and other mathematical contexts.

Semester- IV
Course Title: **Calculus of variation and Integral Equations**

Paper- III
Course Code: MAT 506 C
Status: Compulsory Course
Course Instructor:Dr Pramod Joshi, Assistant Professor
Dept. of Mathematics,
Mobile: 9412954452
Email: pramod.joshi1975@gmail.com
After Successful completion of this course, students will be able to:

- Understand the concept of functionals, extremals and variation;
- Know about necessary and sufficient condition for extrema;
- Know about Euler equation and variational methods for ODE and PDE;
- Classify the linear integral equation and relation between differential and integral equations;
- Know about Fredholm equations of second kind and Eigen values problems.
- Solve the Fredholm and Volterra equations with successive approximation method.

Semester- II &IV
Title of the course: **Statistical Analysis**
Course code: MAT 10 E
Status: Elective
Course Instructor: Dr Dhirendra Singh,Assistant Professor
Dept. of Mathematics,
Mobile: 9410614935
Email: dsingh94106@gmail.com
After the successful completion of this course the students will be able to:
(Knowledge Based)

- Understand how statistical inferences can be derived.
- Test a hypothesis.
- Ddefine critical region, level of significance and two types of errors.
- Use likelihood Ratio test, Chi square distribution and its application.
- Define and explain simple and multiple regressions, Hazard function.
- (Skills)
- Represent statistically analyse data both graphically and numerically.
- Perform parameter testing techniques including single and multi- sample tests for means, standard deviations and proportions.
- Explain and successfully apply the Central Limit theorem to describe inferences using normal distribution.
- Identify and demonstrate appropriate sampling and data collection processes.

Semester- IV
Course Title: **Operation Research**
Paper- IV & V
Course Code: MAT08E
Status: Elective Course
Course Instructor: Dr Pramod Joshi, Assistant Professor
Dept. of Mathematics,
Mobile: 9412954452
Email: pramod.joshi1975@gmail.com
After Successful completion of this course, students will be able to:

- Explain the basics of Operations Research.
- It is used to find optimal or near optimal solutions to complex decision making problems.
- It is used in finding maximum (of profit or yield) in real-world objective.
- It is used in finding minimum (of loss or cost) in real-world objective.
- Solve linear programming problem by different methods like Graphical, Simplex and duality.
- Formulation of transportation problem.
- Develop a working knowledge of concepts and methods related to designing and managing operations and supply chains.
- Finding initial basic feasible solution, test of optimality, degeneracy by MODI method and stepping stone method.
- Find the solution of Assignment problems by Hungarian method.

- Understand the concept of sensitivity analysis.
- Define the concept of dynamic and Integer programming.
- Solve the problem related to network flow.
- Formulate and non linear programming problems (NLPP).

Semester- IV

Course Title: **Viva Voce, Comprehensive Test and Seminar**

Paper- VI

Course Code: MAT508C

Status: Compulsory Course

Internal Examiner: Dr Pramod Joshi, Assistant Professor
Dept. of Mathematics,

Mobile: 9412954452

Email: pramod joshi1975@gmail.com

After Successful completion of this course, students will be able to:

Know the projects preparation

- Present their presentations confidently.
- Know to prepare good & effective presentations.
- To raise questions in any mathematical topics.
- Know to express their appropriate knowledge on any topic during any Viva Voce.

Incharge,
Department of Mathematics

Principal
P.N.G. Government P.G. College
Ramnagar (Nainital)

Physics

Department of Physics

Course Specific outcomes: B. Sc.

Teaching activities:

1. Theoretical sessions.
2. Practical sessions.
3. Problem solving sessions.
4. Numerical simulation practices.
5. Presentations/group discussions/projects
6. Self study
7. Examinations.

PROGRAM SPECIFIC OUTCOMES

First Year (I & II Semester)

Students will be able to articulate and describe:

1. Knowledge about forces that help the students in their daily life.
2. The velocity and acceleration parameter give the knowledge about how the vehicles move and about the rolling concept.
3. Relative motion, Inertial and Non-inertial reference frame.
4. Parameters of defining the motion of mechanical systems and their degrees of freedom.
5. Study of the interaction of forces between solids in mechanical systems.
6. Centre of mass and inertia of mechanical system, Newton's laws of motion and conservation principles.
7. Introduction to analytical mechanics as a systematic tool for problem solving.
8. Basic concepts of special relativity and its applications to physical sciences.
9. How electric current can generate a magnetic field.
10. How to create electromagnet.
11. How electricity and magnetism work together in electric motors and generators.
12. How magnetic field can be generated and applications of magnetic field.
13. Various phenomena like ferromagnetism, paramagnetism, aniti ferromagnetism.
14. Concept of mechanics, acoustic and the properties of matter.

15. Physical characteristics of SHM and obtaining solution of the oscillator using differential equations.

16. Calculate logarithmic decrement relaxation factor and quality factor of a harmonic oscillator.

17. Solve wave equation and understand significance of longitudinal and transverse waves.

18. Solve wave equation of a longitudinal vibration inn bars free at one end and also fixed at both the ends.

Second Year (III & IV Semester)

On satisfying the requirements of this course, students will have knowledge and skill to:

1. Know the principles of structures determination by diffraction.

2. Understand the principles and techniques of X-rays diffraction.

3. Know the fundamental principles of semiconductors and be able to estimate the charge carrier mobility and density.

4. Give an extended knowledge about magnetic properties like diamagnetic, paramagnetic, ferromagnetic, ferrites and superconductors.

5. Study kinetic theory of Gases.

6. Study Maxwell Relations and Application.

7. Know the elementary concept of statistics.

8. Understand statistical distribution of system of particles.

9. Study statistical ensembles.

10. Study Quantum statistics.

11. Understand the physics behind various phenomena in wave and optics.

12. Gain knowledge on various theories of light.

13. Acquire skills to identify and apply formulas of optics and wave physics.

14. Understand the properties of light like reflection, refraction, interference, diffraction etc.

15. Understand the applications of diffraction and polarization.

16. Understand the applications of interference in design and working of interferometers.

17. Understand the working and applications of different optical instruments.

Third Year (V& VI Semester)

After completion of this course students are able to:

1. Know the Rutherford Experiment of atom.

2. Understand molecular spectra of atom.

3. Study the Raman spectra.

4. Study the Zeeman Effect.

5. Understand the Quantum Numbers.

6.Understand De-Broglie hypothesis and Uncertainty principle

7. Derive Schrodinger"s time dependent and independent equations

8. Solve the problems using Schrödinger"s steady state equation

9. Get knowledge of rigid rotator.

10. Understand different operators in Quantum Mechanics.

11. Know the properties of nucleus likes binding energy, magnetic dipole moment and electric quadruple moment.

12. Understand the concept of radioactivity and decays law.

13. Study achievement of Nuclear Models of Physics and its limitations.

14. Have an extended knowledge about nuclear reactions such as nuclear fission and fusion.

15. Understand the basic concept of Particle Physics

16. Know the special purpose Diode.

17. Study the Transistor Amplifier.

18. Understand the FET, JFET,MOSFET.

19. Study the Regulated Power supply.

20. Understand the Logic Circuits.

21. Know the history of LASERS and its basic concepts.

22. Understand the basic principle and working of different types of lasers. CO-23. Know the applications of lasers in various fields.

24. Understand the characteristics of LASERS.

25. Learn safety precautionsand measures while handling the lasers.

Course Specific outcomes: M. Sc.

Teaching activities:

1. Theoretical sessions.
2. Practical sessions.
3. Problem solving sessions.
4. Numerical simulation practices.
5. Presentations/group discussions/projects
6. Self study
7. Examinations.

M. Sc. I Year (I & II Semester)

PROGRAM SPECIFIC OUTCOMES

Thiscourse enables the students to understand:

1. TheLagrangian and Hamiltonian approaches in classical mechanics.

2. The classical background of Quantum mechanicsand get familiarized with Poisson brackets and Hamilton -Jacobi equation

3. Kinematics and Dynamics of rigid body in detail and ideas regarding Euler's equations of motion.

4. Theory of small oscillations in detail along with basis of Free vibrations.

5. Learn about Gradient, Divergence and Curl in orthogonal curvilinear and their typical applications in physics.

6. Special type of matrices that are relevant in physics and then learn about tensors.

7. Special functions like Gamma function, Beta function, Delta function, Dirac delta function, Bessel functions and their recurrence relations

8. Different ways of solving second order differential equations and familiarized with singular points and Frobenius method.

9. Fundamentals and applications of Fourier series, Fourier and Laplace transforms,their inverse transforms etc.

10. The Laws of reflection, refraction are outcomes of electromagnetic boundary conditions. They will also be able design dielectric coatings which act like antireflection coatings. They will be able to distinguish between a good metal and a good dielectric.

11. The idea of electromagnetic wave propagation through wave guides and transmission lines.

12. Special theory of relativity by including the relativistic electrodynamics.

13. The rather complex physical phenomena observed in plasma.

14.Postulates of statistical mechanics.

15. Statistical interpretation of thermodynamics micro canonical, canonical and grand canonical ensembles.

16. Methods of statistical mechanics are used to develop the statistics for Bose-Einstein and Fermi-Dirac.

17. The application of Time- independent Perturbation Theory.

18. The WKB approximation. [illegible]. Know the application and validity of Born Approximation.

19. Different atomic models and will be able to differentiate different atomic systems, different coupling schemes and their interactions with magnetic and electric fields.

20. The techniques of microwave and infrared spectroscopy to elucidate the structure of molecules

21. The application of the principle of Raman spectroscopy and its applications in the different field of science & Technology.

22. Different resonance spectroscopic techniques and its applications

23. Solutions to problems related with different spectroscopic systems.

M.Sc. 2nd Year (IIIrd & IVth Semester)

After completion of this course students are able to:

1. Understand basic concepts via structural properties of materials.

2. Understand the basic transport properties of metals and semiconductors.

3. Understand the band structures for studying different materials.

4. Have basic knowledge of nuclear size ,shape , bindingenergy.etc and also the characteristics of nuclear force in detail.

5. Gain knowledge about various nuclear models.

6.Acquire knowledge about nuclear decay processes and their outcomes and have a wide understanding regarding Alpha, beta and gamma decay.

7. Understand the basic forces in nature and classification of particles and study in detail conservations laws and quark models in detail

8. Have a basic knowledge of crystal systems and spatial symmetries,- be able to account for how crystalline materials are studied using diffraction, including concepts like reciprocal lattice and Brillouin zones.

9.Know what phonons are, and be able to perform estimates of their dispersive and thermal properties.

10. Know Bloch's theorem and what energy bands are and know the fundamental principles of semiconductors.

11. Know the fundamentals of dielectric and ferroelectric propertiesof materials.

12. Know basic models of dia, para and ferro magnetism. Be able to explain superconductivity using BCS theory

13. 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.

14. Have gained ability to apply the techniques of microwave and infrared spectroscopy to elucidate the structure of molecules.

15. Apply the principle of Raman spectroscopy and its applications in the different field of science & Technology.

16. Understand Field Effect Transistors, their principles and applications.

17. Understand basic operational amplifier characteristics, OPAMP parameters,applications as inverter, integrator, differentiator etc.

18. Understand digital electronics basics using logic gates and working of major digital devices like flip flops, CMOS, CCD etc.

19. Understand Karunagh's map, flip-flops,counters and working of Microprocessor in detail.

20. Understand signal and noise measurement considerations in electronics and communications.

21. Understand electromagnetic wave propagation in guided media and unguided media.

Department of Physics Govt. P.G. College Ganeshpur (H.P.)

आचार्य
स्ना० स्नातकोत्तर महाविद्यालय
गणेशपुर (ऐतिहास)

Department of Music (Vocal)

Course Outcomes- B.A. Music (Vocal)

(2014-15 Onwards)

Indian Music- B.A. First Semester

Max Marks -50

First Paper -Science Of Music Marks-35

On completion of prescribed Syllabus students of Music (Vocal) are able to

1. Understand Shruties, Swar and their comparison.
2. Understand Notes or Swar establishment of Bharat.
3. Understand swar establishment described by Pt. Somnath and Pt. Bhatkhande.
4. Understand Principle of Swar Sthapan in Veena by Pt. Ahobal and pt. Shrinivas.
5. Understand Musical intervals of Saptak.
6. Understand Major tone, Minor tone and Semi-tone and their differences.

Internal Assessment Marks-15

Max.Marks-50

Second Paper-Studies of Ragas and Talas **Marks- 35**

On completion of prescribed Syllabus students of Music (Vocal) are able to

1. Understand classification of shudhha, chayalag and sankiran Raga.
2. Understand Raga and their special characteristics along with detail of raga (Durga, Bhupali, Yaman, and Bhairav).
3. Understand theoretical knowledge, detailed and comparative study of prescribed Ragas.
4. Understand and recognize Raga and Alap.
5. Understand writing notation of compositions in prescribed Ragas with alap-taan.
6. Understand writing notations of Dhrupad-Dhamar along with Dugun, Tigun and Chaugun laya.
7. Understand writing notations of Thah laya, Dugun,Tigun and Chaugun of Teen taal and Jhap taal.
8. Understand to describe life-sketch and contribution of the following musicians- swami Haridas and Sadarang.

Internal Assessment Marks-15

Max.Marks- 50

Practical Examination Part -1Marks-35

On completion of prescribed syllabus students of Music (Vocal) are able to

1. Demonstrate Drut Khayal composition in four Ragas (Durga, Bhupali,Yaman,Bhairav) with complete gayaki .
2. Demonstrate one Vilambit Khayal with complete gayaki.

3. Demonstrate one Dhrupad with Layakari in any raga of course.
4. Demonstrate one Dhamar with Layakari in any raga of course.
5. Demonstrate Bhajan in any raga of course.
6. Recite and demonstrate Laykari with Thah, Dugun, Tigun and Chaugun Theka of Teen taal and Jhap taal and with Tali and Khali.

Practical Examination Part -2

Viva-Voce. **Mark-15**

Programme Specific Outcomes

Each student in this program is able to:

1. Exhibit knowledge of different philosophies of music education and develop a personal philosophical foundation for her/his career;
2. Demonstrate competence in oral, written, and communication skills.

Indian Music- B.A. Second Semester

Max Marks -50

First Paper -Science Of Music Marks-35

On completion of prescribed Syllabus students of Music (Vocal) are able to

1.Understand Sambanta and Vimbanta.

2. Understand Gram, Jati- Gayan, Murchana, Nyas, Sanyas, Vinyas and Swasthan Niyam.

3. Underland writing essays on general topic of music.

Studies of Ragas and Talas

On completion of prescribed Syllabus students of Music (Vocal) are able to

1. Understand Geet, Gandharva, Gaan, Desi-Margi Music.

2. Understand Raga and their special characteristics along with detail of raga (Jaijaiwanti, Shankara, Hindol, and Kamod).

3.Understand theoretical knowledge, detailed and comparative study of prescribed Ragas.

4.Understand and recognize Raga and Alap.

5.Understand writing notation of compositions in prescribed Ragas with alap-taan.

6.Understand writing notations of Dhrupad-Dhamar along with Dugun, Tigun and Chaugun laya.

7.Understand writing notations of Thah laya, Dugun,Tigun and Chaugun of Chaar taal and Tilwada taal.

8.Understand to describe life-sketch and contribution of the following musicians- Adarang, pt.Vishnu Narayan Bhatkhande and Amir Khusro.

विभागाध्यक्ष
संगीत विभाग,
6/04/2021

Internal Assessment Marks-15

Max.Marks- 50

Practical Examination Part -1Marks-35

On completion of prescribed syllabus students of Music (Vocal) are able to

1.Demonstrate Drut Khayal composition in four Ragas (Jaijaiwanti, Shankara, Hindol, Kamod) with complete gayaki .

2.Demonstrate one Vilambit Khayal with complete gayaki.

3.Demonstrate one Dhrupad with Layakari in any raga of course.

4.Demonstrate one Dhamar with Layakari in any raga of course.

5.Demonstrate Tarana in any raga of course.

6.Recite and demonstrate Laykari with Thah, Dugun, Tigun and Chaugun Theka of Chaar taal and Tilwada taal and with Tali and Khali.

Practical Examination Part -2

Viva-Voce. **Mark-15**

Indian Music- B.A. Third Semester

Max Marks -50

First Paper -Science Of Music Marks-35

On completion of prescribed Syllabus students of Music (Vocal) are able to

1. Understand difference between Notation systems of pandit Vishnu narayan bhatkhande and pandit Vishnu digambar paluskar.

2.Understand brief history of Ancient and Medieval Indian Music.

3. Understand difference between notes and taal of North Indian and South Indian Music.

Internal Assessment Marks-15

Max.Marks-50

Second Paper-Studies of Ragas and Talas **Marks- 35**

विभागाध्यक्ष
संगीत विभाग
राजकीय स्नातकोत्तर महाविद्यालय
रामगढ़ (शेखावाटी) 06/04/2021

On completion of prescribed Syllabus students of Music (Vocal) are able to

1.Understand Nibadhha gaan, Anibadhha gaan, Ragalap, Rupakalap, Alaptigaan, Alpatva-Bahutva, Trivat.

2. Understand classification of Raga in detail.

3. Understand Raga and their special characteristics along with detail of raga (Shudhha kalyan, Bahar,Chayanat,Miyan-malhar).

4.Understand theoretical knowledge, detailed and comparative study of prescribed Ragas.

5.Understand and recognize Raga and Alap.

6.Understand writing notation of compositions in prescribed Ragas with alap-taan.

7.Understand writing notations of Dhrupad-Dhamar along with Dugun, Tigun and Chaugun laya.

8.Understand writing notations of Thah laya, Dugun,Tigun and Chaugun of Keherwa taal and Roopak taal.

9.Understand to describe life-sketch and contribution of the following musicians- Tansen and Pt. Vishnu digambar paluskar.

Internal Assessment Marks-15

Max.Marks- 50

Practical Examination Part -1Marks-35

On completion of prescribed syllabus students of Music (Vocal) are able to

1.Demonstrate Drut Khayal composition in four Ragas (Shudhha kalyan, Bahar,Chhayanat, Miyan-malhar) with complete gayaki .

2.Demonstrate one Vilambit Khayal with complete gayaki.

3.Demonstrate one Dhrupad with Layakari in any raga of course.

4.Demonstrate one Dhamar with Layakari in any raga of course.

5.Demonstrate Bhajan in any raga of course.

6. Recite and demonstrate Laykari with Thah, Dugun, Tigun and Chaugun Theka of Keherwa taal and Roopak taal and with Tali and Khali.

Practical Examination Part -2

Viva-Voce. **Mark-15**

Indian Music- B.A. Fourth Semester

Max Marks -50

First Paper -Science Of Music Marks-35

विभागाध्यक्ष
संगीत विभाग
राजकीय महाविद्यालय

On completion of prescribed Syllabus students of Music (Vocal) are able to

1.Understand difference between Harmony and Melody.

2. Understand writing essays on general topic of music.

3. Understand about Dhrupad, Dhamar, Khayal, Tappa, Thumari in detail.

Internal Assessment Marks-15

Max.Marks-50

Second Paper-Studies of Ragas and Talas **Marks- 35**

On completion of prescribed Syllabus students of Music (Vocal) are able to

1.Understand historical terms of Indian Music like Avirbhav-Tirobhav, Swasthan niyam of Alap, Alap style in modern era,Chaturang.

2. Understand Raga and their special characteristics along with detail of raga (Gaud malhar, Ramkali,Darbari,Puriya dhanashri).

4.Understand theoretical knowledge, detailed and comparative study of prescribed Ragas.

5.Understand and recognize Raga and Alap.

6.Understand writing notation of compositions in prescribed Ragas with alap-taan.

7.Understand writing notations of Dhrupad-Dhamar along with Dugun, Tigun and Chaugun laya.

8.Understand writing notations of Thah laya, Dugun,Tigun and Chaugun of Dhamar taal and Sul taal.

9.Understand to describe life-sketch and contribution of the following musicians- Pt. Bhimsen joshi, Omkarnath thakur.

Internal Assessment Marks-15

Max.Marks- 50

Practical Examination Part -IMarks-35

On completion of prescribed syllabus students of Music (Vocal) are able to

1. Demonstrate Drut Khayal composition in four Ragas (Gaud malhar, Ramkali,Darbari,Puriya dhanashri).with complete gayaki .

2.Demonstrate one Vilambit Khayal with complete gayaki.

3.Demonstrate one Dhrupad with Layakari in any raga of course.

4.Demonstrate one Dhamar with Layakari in any raga of course.

5.Demonstrate Tarana in any raga of course.

6. Recite and demonstrate Laykari with Thah, Dugun, Tigun and Chaugun Theka of Dhamar taal and Sul taal and with Tali and Khali.

विभागाध्यक्ष
संगीत विभाग
राजकीय स्नातकोत्तर महाविद्यालय
[illegible] 04/12/24

Practical Examination Part -2

Viva-Voce. **Mark-15**

Indian Music- B.A. Fifth Semester

Max Marks -50

First Paper -Science Of Music Marks-35

On completion of prescribed Syllabus students of Music (Vocal) are able to

1.Understand through detailed study of modern indian music and contributions of its Saviors.

2. Understand Gharanas of Hindustani music and their Salient features like type ,characteristics, musician etc.

3.Understand western notaion system.

Internal Assessmeat Marks-15

Max.Marks-50

Second Paper-Studies of Ragas and Talas **Marks- 35**

On completion of prescribed Syllabus students of Music (Vocal) are able to

1.Understand historical terms of Indian Music like Nayak, Gayak, Gandharva, Pandit, Sangeet –shastrakar.

2. Understand Raga and their special characteristics along with detail of raga (Desi, Multani, Shudhha sarang,Basant).

4.Understand theoretical knowledge, detailed and comparative study of prescribed Ragas.

5.Understand and recognize Raga and Alap.

6.Understand writing notation of compositions in prescribed Ragas with alap-taan.

7.Understand writing notations of Dhrupad-Dhamar along with Dugun, Tigun and Chaugun laya.

8.Understand writing notations of Thah laya, Dugun,Tigun and Chaugun of Adhha chautal and Deepchandi taal.

9.Understand to describe life-sketch and contribution of the following musicians- Pt. Sharangdev, Acharya Kailash Chandra dev Brahaspati.

Internal Assessment Marks-15

Max.Marks-50

Practical Examination Part -1Marks-35

On completion of prescribed syllabus students of Music (Vocal) are able to

1. Demonstrate Drut Khayal composition in four Ragas (Desi, Multani, Shudhha sarang,Basant)

with complete gayaki .

2.Demonstrate one Vilambit Khayal with complete gayaki.

3.Demonstrate one Dhrupad with Layakari in any raga of course.

4.Demonstrate one Dhamar with Layakari in any raga of course.

5.Demonstrate Bhajan in any raga of course.

6. Recite and demonstrate Laykari with Thah, Dugun, Tigun and Chaugun Thcka of Adhha Chautal and Deepchandi taal with Tali and Khali.

Practical Examination Part -2

Viva-Voce. **Mark-15**

Indian Music- B.A. Sixth Semester

Max Marks -50

First Paper -Science Of Music Marks-35

On completion of prescribed Syllabus students of Music (Vocal) are able to

1.Understand musical terms of western music like Time Signature, Scale, Swar-Saptak and Chord.

2. Understand various types of Sounds like Musical and Non-Musical, Echo in Indian Music.

3.Understand writing essays on general topic of music in brief.

4. Understand Prabandh Shaily in detail.

Internal Assessment Marks-15

Max.Marks-50

Second Paper-Studies of Ragas and Talas **Marks- 35**

विभागाध्यक्ष
संगीत विभाग
राजकीय स्नातकोत्तर महाविद्यालय
[illegible] 12.21

On completion of prescribed Syllabus students of Music (Vocal) are able to

1.Understand and describe following general topic of music : Sangeet-Shikshak, Qavval, Vaggeyakar, Khamsa and Lavani.

2. Understand Raga and their special characteristics along with detail of raga (Vibhas, Adhana, Puriya, Paraj and Lalit).

4.Understand theoretical knowledge, detailed and comparative study of prescribed Ragas.

5.Understand and recognize Raga and Alap.

6.Understand writing notation of compositions in prescribed Ragas with alap-taan.

7.Understand writing notations of Dhrupad-Dhamar along with Dugun, Tigun and Chaugun laya.

8.Understand writing notations of Thah laya, Dugun,Tigun and Chaugun of Panjabi taal and Jhumra taal.

9.Understand to describe life-sketch and contribution of the following musicians- Ustad Abdul Kareem khan,Ustad Faiyaz khan and Ustad Amir Khan.

Internal Assessment Marks-15

Max.Marks- 50

Practical Examination Part -1Marks-35

On completion of prescribed syllabus students of Music (Vocal) are able to

1.Demonstrate Drut Khayal composition in four Ragas (Vibhas, Adhana, Puriya, Paraj and Lalit)with complete gayaki .

2.Demonstrate one Vilambit Khayal with complete gayaki.

3.Demonstrate one Dhrupad with Layakari in any raga of course.

4.Demonstrate one Dhamar with Layakari in any raga of course.

5.Demonstrate Tarana in any raga of course.

6.Recite and demonstrate Laykari with Thah, Dugun, Tigun and Chaugun Theka of Panjabi and Jhumra taal and with Tali and Khali.

Practical Examination Part -2

Viva-Voce. **Mark-15**

Programme Outcomes

The programme of entire graduation course of Music help students to develop intellectually as well as professionally in their concerning area of interest. The graduate attributes can be classified under the following area:

विभागाध्यक्ष
संगीत विभाग
राजकीय स्नातकोत्तर महाविद्यालय
रामनगर (नैनीताल) 2021

- Students are able to comprehend all aspect of Music theory including all historical periods, genres and styles.
- Knowledge of music literature.
- They are able to demonstrate competence in musicianship, to include: aural skills, and knowledge and application of music theory.

Finally, graduates from Music programmes reports that classical music can teach a student every aspect of music including harmony, melody, rhythm, meter, variation, in depth knowledge of our classical music etc.

विभागाध्यक्ष
संगीत विभाग
राजकीय स्नातकोत्तर महाविद्यालय
रामनगर (नैनीताल)

प्राचार्य
राज० स्नातकोत्तर महाविद्यालय
रामनगर (नैनीताल)

Faculty of Arts

(1) विषय–संस्कृत (स्नातक स्तर)

Course Outcomes (अधिगम उपलब्धि)

- संस्कृत नाट्य साहित्य को सामान्य रूप से समझ सकने में सक्षम होंगें।
- नाटक की पारिभाषिक शब्दावली से सुपरिचित होंगें।
- नाटक में प्रयुक्त रस, छन्द एवम् अलंकारों का सम्यक् बोध कर सकेंगें।
- संवाद एवम् अभिनय कौशल में पारंगत होंगें।
- नवीन पदों के ज्ञान द्वारा उनके शब्दकोश में वृद्धि होगी।
- भारतीय सांस्कृतिक तत्त्वों एवं मूल्यों को आत्मसात् कर, भारतीयता के गर्वबोध से युक्त उत्तम नागरिक बनेंगें।
- व्याकरण परक शब्दों की सिद्धि प्रक्रिया से परिचित हो सकेंगें।
- व्याकरण शास्त्र के ज्ञान के माध्यम से शुद्ध वाक्य विन्यास कौशल का विकास हो सकेगा।
- संस्कृतव्याकरण का सामान्य ज्ञान प्राप्त कर उसकी वैज्ञानिकता से सुपरिचित हो सकेंगें।
- संस्कृत वर्णों के शुद्ध उच्चारण कौशल का विकास होगा।
- स्वर एवं व्यंजन के मूल भेद को समझकर पृथक् अर्थावगमन की क्षमता विकसित होगी।
- स्वर, व्यंजन एवं विसर्ग सन्धि का विधिवत् ज्ञान एवम् उनके अनुप्रयोग का कौशल विकसित होगा।
- विद्यार्थी काव्यशास्त्र के उद्भव और विकास से सुपरिचित होकर काव्यशास्त्रीय तत्त्वों को समझने में सक्षम होंगें।
- छन्द की विविध परिभाषा उनके भेद एवं नियमों को समझकर सामर्थ्यवान् बनेंगें।
- संस्कृत अलंकारों के ज्ञान के माध्यम से काव्य के सौन्दर्य का बोध कर सकेंगें।
- कल्पनाशीलता एवं रचनात्मकक्षमता का विकास होगा।
- शब्द ज्ञान कोष में वृद्धि होगी।
- विद्यार्थी संस्कृत साहित्य का सामान्य परिचय प्राप्त कर काव्य के विविध भेदों से परिचित हो सकेंगें।
- वे संस्कृत पद्य साहित्य की सुगीतात्मकता का सौन्दर्य बोध कर सकेंगें।
- उनमें काव्य में प्रयुक्त रस, छन्द एवम् अलंकारों को समझने की क्षमता विकसित होगी।
- पद्य में निहित सूक्तियों एवं सुभाषित वाक्यों के माध्यम से उनका नैतिक एवं चारित्रिक उन्नयन होगा।
- विद्यार्थियों के शब्दकोश में रुचि होने के साथ–साथ वे संस्कृत श्लोकों के शुद्ध स्वर उच्चारण के कौशल में निपुण बनेंगें।
- विद्यार्थी संस्कृत गद्य साहित्य का सामान्य ज्ञान प्राप्त कर गद्यकाव्य के भेदों से सुपरिचित हो सकेंगें।
- सम्बन्धित साहित्य के माध्यम से उनका नैतिक एवं चारित्रिक उत्कर्ष होगा।
- राष्ट्रभक्ति की भावना प्रबल होगी तथा उत्तम नागरिक बनेंगें।

- वाच्य के नियमों एवं कर्तृवाच्य, कर्मवाच्य एवं भाववाच्य इन भेदों को जानकर अनुवाद एवं भाषागत शुद्धता के कौशल में सक्षम होंगें।
- संस्कृत गद्य धारा प्रवाह एवं शुद्ध वाचन का कौशल विकसित होगा।
- विद्यार्थी संगणक के प्रयोग से E-Content एवं डिजिटल लाइब्रेरी का उपयोग कर पाने में सामर्थ होंगें।
- संस्कृत भाषा और साहित्य के नित-नूतन अन्वेषण को खोज पाने तथा उससे स्वज्ञान-कोष में वृद्धि कर पाने योग्य होंगें।
- संगणक के प्रयोग के माध्यम से संस्कृत ज्ञान के प्रचार-प्रसार एवम् आदान-प्रदान करने में कुशल बनेंगें।
- पारंपरिक एवं वैश्विक ज्ञान में सामंजस्य बनाकर ज्ञान की अभिवृद्धि करने एवम् जीविकोपार्जन के नवीन मार्ग खोजने का कौशल विकसित होगा।
- व्याकरणशास्त्र के ज्ञान के माध्यम से शुद्ध वाक्य विन्यास कौशल का विकास हो सकेगा।
- विद्यार्थियों में निबन्ध एवम् अनुच्छेद लेखन क्षमता का विकास होगा।
- संस्कृत पत्र लेखन कौशल में वृद्धि होगी।
- वैदिक वाङ्मय एवं संस्कृति का ज्ञान प्राप्त कर सकेंगें।
- वैदिक एवम् औपनिषदिक संस्कृति के प्रति गौरव बोध होगा।
- वेदोक्त सन्देशों एवं मूल्यों के माध्यम से आचरण का उदात्तीकरण होगा।
- उपनिषद् का सामान्य परिचय एवं निहित उद्देश्यों का अवबोध होगा।
- औपनिषदिक कर्म, संयम, शक्ति एवं त्याग मूलक संस्कृति से परिचित होंगें।
- वैदिक एवम् औपनिशदिक संस्कृति के प्रति गौरव बोध होगा।
- वैदिक सूक्तों के माध्यम से विद्यार्थियों को तत्कालीन आध्यात्मिक, सामाजिक एवं राष्ट्रीय परिदृश्य का निदर्शन होगा।
- भारतीय दार्शनिक तत्वों का सामान्य ज्ञान प्राप्त होगा।
- दर्शन में विद्यमान नैतिक एवं कल्याणपरक तथ्यों से आत्मोत्कर्ष की अभिप्रेरणा प्राप्त होगी।
- भारतीय दर्शन में निहित उद्देश्यों एवं ज्ञान को आचरण में समाहित करने हेतु अभिप्रेरित होंगें।
- गीता ज्ञान रहस्य द्वारा सृष्टि कल्याणार्थ भाव विकसित होंगें।
- संस्कृतभाषा एवं व्याकरण की वैज्ञानिकता का अवबोध होगा।
- ध्वनि के प्रारम्भिक एवं वर्तमान स्वरूप तथा ध्वनि परिवर्तन के कारणों के प्रति विश्लेषणात्मक दृष्टि विकसित होगी।
- पदों की सिद्धिप्रक्रिया के माध्यम से शब्दनिर्माण की वैज्ञानिकता से परिचित होंगें।
- आधुनिक संस्कृतसाहित्य के विधाओं के माध्यम से नवीन बिम्बविधानों एवं नवीन विषयों का ज्ञान प्राप्त होगा।

(2) विषय– संस्कृत (स्नातक–स्तर)

Programme outcomes (POS) (कार्यक्रम के परिणाम)

- विद्यार्थियों को लेखन, वाचन एवम् अध्ययन की दृष्टि से भाषागत दक्षता प्राप्त होगी।
- सहज एवं स्वाभाविक रूप से भाषागत पारंगत करके उनमें प्रभावशाली अभिव्यक्ति की क्षमता उत्पन्न होगी।
- आत्मविश्वास से युक्त एवं नेतृत्व क्षमता के धारक होंगें।
- नैतिक एवं चारित्रिक दृष्टि से मूल्यवान् व्यक्तित्वधारी होकर भारतीयता के बोध के साथ वैश्विक नागरिक के रूप में भावी चुनौतियों का सामना करने में सक्षम होंगें।

(3) विषय–संस्कृत (स्नातक स्तर)

Programme Specific Outcomes (PSOS) (कार्यक्रम के विशिष्ट परिणाम)

- सर्वाधिक वैज्ञानिक भाषा के रूप में संस्कृतभाषा के प्राचीन महत्व एवम् उसकी वर्तमान प्रासंगिकता को जानने–समझने योग्य होंगे।
- संस्कृतसाहित्य की विभिन्न विधाओं (गद्य, पद्य, नाटक, व्याकरण इत्यादि) से सुपरिचित होकर संस्कृत मर्मज्ञ बन सकेंगें।
- संस्कृतव्याकरण के विभिन्न अंगों के ज्ञान द्वारा भाषा के शुद्ध अध्ययन, लेखन एवम् उच्चारण के माध्यम से अभिव्यक्ति–कौशल का विकास होगा।
- आयुर्वेद, वास्तुशास्त्र, ज्योतिष, नित्यनैमित्तिक कर्मकाण्ड आदि के माध्यम से जीविकोपार्जन के योग्य बनेंगें।
- वैदिक एवं लौकिक–संस्कृतसाहित्य की समृद्धता एवं तन्निहित नैतिकता व आध्यात्मिकता को अनुभूत कर भारतीयसंस्कृति के महत्त्व को वैश्विक स्तर तक पहुँचाने में सक्षम होंगें।
- धर्म–दर्शन, आचार–व्यवहार, नीतिशास्त्र एवं भारतीयसंस्कृति के मूलतत्त्वों को जानकर उत्तम चरित्रवान् मानव एवं कुशल नागरिक बनें (बन सकेंगे)।
- सामसामयिक–समस्याओं के समाधान के रूप में संस्कृतसाहित्य में निबद्ध सर्वांगीणता के प्रति शोधपरक दृष्टि का विकास होगा।

MShukla 06/04/2021

(डॉ0 मूलचन्द्र शुक्ल)
प्रभारी, संस्कृत विभाग
राजकीय स्नातकोत्तर महाविद्यालय
रामनगर (नैनीताल)

प्राचार्य
राजकीय स्नातकोत्तर महाविद्यालय
रामनगर (नैनीताल)

Department of Geography

Department of Geography

Course Outcome- B.A

Semester-1

Course Code-101 Physical Geography

On completion of the course, students are able to,

1. Understand scope and branches of physical geography, origin of the earth, interior of the earth.
2. Understand the origin of the continent and ocean basins: Wegener's theory the plate tectonics and major landforms.
3. Understand the composition and structure of atmosphere, insolation, vertical and horizontal distribution of atmospheric temperature, pressure and pressure belt.
4. Understand ocean bottom topography, ocean deposits, temperature, ocean, tides and coral reefs.

Course Code-102 Geography of Asia (Excluding India)

On completion of the course, students are able to,

1. Acquire the knowledge of Asia in the context of the world (geo political significance and extent), structure and relief, drainage, climate, natural vegetation, soil, natural regions of Asia.
2. Understand population distribution, agriculture region and principal minerals.
3. Understand industrial regions, transport, major cities, and source of power.
4. Understand regions and countries: japan, china, Pakistan, Indonesia, Iran and Israel.

SEMESTER-II

Course Code-201: Physical Geography

On completion of the course, students are able to,

1. Understand the nature and scope of geomorphology, dominant contemporary methodologies, the role and nature of time in geomorphology.
2. Understand model of landscape evolution: Davis, Penck, king and A time-independent modal of heck, deterministic modeling of process-response.
3. Understand Isostasy, seismicity, vulcanicity, tectonic and neo-tectonic landforms.
4. Understand the mass wasting and associated landforms, landforms associated with geomorphic agents.

Course Code-202 Geography of India

On completion of the course, students are able to,

1. Understand India-A subcontinent, physical feature, geologic structure, drainage system, climate, natural vegetation, soil, natural regions.
2. Understand agriculture, crops (food, plantation and commercial), agriculture production, and agriculture regions.
3. Understand industries (metallurgical, textile, engineering, chemical, food, leather, forest based).
4. Understand population (density, distribution and urbanization), transport, multipurpose projects, foreign trade, regional development and planning.

SEMESTER-III

Course Code-301 Climatology and Biogeography

On completion of the course, students are able to,

1. Understand nature and scope of climatology, general circulation of the atmosphere, the monsoon local winds.
2. Understand classification of climate: koppen classification and Thornthwaite classification, climate type and their distribution, climate change.
3. Understand biosphere & bio-geography-concept, scope and components, ecosystem concept, component and functioning.
4. Understand distribution of plants in different ecosystem and ecological conditions, distribution of animals in different ecosystem and conditions.

Course Code-302Human Geography

On completion of the course, students are able to,

1. Understand nature and scope of human geography, branch of human geography, concept of man environment relationship.

2. Understand evolution of man: classification of races, characteristics of races and their broad distribution, human adaptation to the environment.
3. Understand the growth and distribution of population, world pattern: physical, economic and social factors, major human agglomerations.
4. Understand rural settlement: types and pattern, urban settlement: evolution and classification, rural houses in India.

SEMESTER-IV

Course Code-401Urban Geography

On completion of the course, students are able to,

1. Understand evolution and concept of urban geography, urban and urbanization.
2. Understand town and culture, origins and growth of ancient town, modern town and their problem.
3. Understand urban areas and conurbation, rural-urban fringe, umland.
4. Understand functional classification of towns, hierarchy of urban settlement, town planning meaning and principals.

Course Code-402 (A) Environmental Geography

On completion of the course, students are able to,

1. Understand definition, scope and evolution of environmental geography, concept of environmental geography.
2. Understand ecosystem: food chains, trophic levels and productivity, energy flow, circulation of element and geo-biochemical cycle.
3. Understand ecosystem services, biomes, bio-diversity, soil system, man and climate.
4. Understand environmental degradation, environmental events hazards, and environmental pollution.

Course Code-402 (B) World Regional l Geography (Except Asia)

On completion of the course, students are able to,

1. Understand meaning and scope of regional geography, regions and regionalism, globalization and WTO, pollution environment and sustainable development.
2. Understand Europe: A geographical introduction, physical structure, economic and demographic pattern.
3. Understand North America: A geographical introduction, physical structure, economic and demographic pattern.

4. Understand Latin America:A geographical introduction, physical structure, economic and demographic pattern, regional study of Brazil.

SEMESTER-V

Course Code-501 Evolution of Geographical thoughts

On completion of the course, students are able to,

1. Understand definition and purpose of geography, science and philosophy of geography, the basic concept of geography.
2. Understand geography in classical times: Greek and Roman geographers contribute by Arab geographers, renaissance, eighteenth century geography.
3. Understand formulation of scientific geography, school of thought: German, French environmental determinism, possiblism.
4. Understand dualism in geography, dichotomism of scientific and regional geography; unity in geography, recent trends in geography.

Course Code-502 (A)Oceanography

On completion of the course, students are able to,

1. Understand definition, scope and development of oceanography.
2. Understand relief of the ocean floor, continental drift and ocean floor spreading, composition of sea water.
3. Understand temperature in oceans, salinity, and density and water masses in oceans.
4. Understand coral landforms, waves and tides, ocean current.

Course Code-502 (B) Agriculture Geography

On completion of the course, students are able to,

1. Understand nature, scope, significance and development of agriculture geography approaches to the study of agriculture geography.
2. Understand determinants of agricultural land use: physical, economic, social, and technological, land holding and land tenure system.
3. Understand theories of agriculture geography, von thunen's theory (model) of agriculture location and its recent modification.

4. Understand regional pattern of productivity in India, green revolution, white revolution, food deficit and food surplus regions, world pattern of agriculture.

Course Code-502 (C) Population Geography

On completion of the course, students are able to,

1. Understand nature, scope,and development of population geography; source and type of population data: census, sample survey and vital registration system.
2. Understand world population; growth causes and consequences; factor affecting population distribution; demographic transition theory.
3. Understand population characteristics; fertility and mortality; age and sex structure; occupational structure; human resource development.
4. Understand population resources region of India; populationgrowth and distribution in India.

SEMESTER-VI

Course Code-601Economic Geography

On completion of the course, students are able to,

1. Understand meaning, aim and scope of economic geography.
2. Understand primary production, vegetation & forest economy, soil resources, mineral resources (iron ore and bauxite).
3. Understand agriculture regions (D. Whittlesey), principle crops: wheat. Paddy, sugarcane, tea, theory of agriculture location.
4. Understand world transportation,; major trans-continental railways, sea and routes, international trade, patterns and trends.

Course Code-602(A) Regional Planning and development

On completion of the course, students are able to,

1. Understand Regional concept in geography: concept,scope& purpose of regional planning, types of regions: formal and functional: uniform and nodal.
2. Understand regional planning: planning process-sectoral, temporal and spatial dimensions; short term and long term perspective planning.
3. Understand regional development strategies: concentration vs. dispersal, case studies for plans of developed and developing countries.
4. Understand concept of multi- level planning: decentralizes planning; peoples participation in the planning process, concept and approaches of urban development, landscape ecology and sustainable ecological development.

Course Code-602(B) Political Geography

On completion of the course, students are able to,

1. Understand definition, nature and scope; geography, politic, geopolitics & political geography; history and development of political geography.
2. Understand concept of nation, state and nation-state; geographic characteristics of states: size, shape, location, cores and capital.
3. Understand global geo-strategic views: A.T. mahan, Mackinder, spykman & sever sky with other views.
4. Understand political geography of India; resource development and power politics; India's neighbors & geopolitical study of Indian Ocean; political geography of SAARC.

Course Code-602(C) Geography of Tourism

On completion of the course, students are able to,

1. Understand concept of leisure and tourism, type of tourism; definition, scope and significance of geography of tourism; geographical basis of tourism; resource and infrastructure for tourism.
2. Understand impact of tourism: physical, economical, and social, culture impacts; concept of ecotourism; new emerging trends in tourism.
3. Understand tourism marketing: marketing concepts and marketing in tourism.
4. Understand globalization and tourism; tourist in India; resource and growth; national tourism policy in India; tourism organization.

Note: - students also gain knowledge through field work/ practical in every class of UG and PG. Cartography classes gives practical knowledge related syllabus. Department also organized every year education tour visit according to their syllabus for the practical knowledge.

Course Outcome-PG. M.A

Semester-1

Course Code-101Advance Physical Geography

On completion of the course, Student are able to,

1. Understand the nature and scope of physical geography, geological time scale, interior constitution of the earth, isostatic balance and plate tectonic plates.
2. Understand lithosphere epirogenetic forces as well as deep knowledge of theories related origin of. continents and ocean basins.

3. Understand lithosphere exogenetic forces which give deep insight on weathering, mass movement, erosion and erosional process.
4. Understand the composition and structure of atmosphere, insolation, and distribution of temperature, atmospheric pressure and winds, precipitation.
5. Understand the relief of the ocean floor, composition of sea water, distribution of temperature and salinity oceanic currents, marine deposits, coral landforms, tide, etc.

Course Code-102 Natural Resource Management

On completion of the course, students are able to,

1. Understand the basic framework related natural resources.
2. Understand the application of remote sensing and geographic information system (GIS) in natural resources studies.
3. Understand the carrying capacity of natural resources with special reference to Himalaya.
4. Understand the ecology and ecosystem.
5. Understand the natural resources management and sustainable development in Himalaya.

Course Code-103 Advance Geography of India

On completion of the course, students are able to,

1. Understand the physical aspect of India.
2. Understand the population and other human aspects.
3. Understand the agriculture scenario and recent agriculture development in India.
4. Understand the industrial resource base and transport network development.
5. Understand the regional divisions of India.

Course Code-105Geography of Tourism

On completion of the course, students are able to,

1. Understand the nature, basic characteristics, significance and development of Geography of tourism.
2. Understand the basic components and present scenario of tourism in India.

3. Understand the measurements and dimensions of tourism.

4. Understand the resort towns and morphology with special reference of Uttarakhand Himalaya.

5. Understand the tourist industry and environment relationship.

Semester II

Course code-201 Advance Geomorphology

On completion of the course, students are able to,

1. Understand the nature, scope, trends and development of geomorphology.
2. Understand the tectonic processes and large & small scale landforms.
3. Understand the radiocarbon, tree ring dating and polycyclic landforms.
4. Understand the theories and techniques related geomorphology.
5. Understand the applied geomorphology and deep insight the related subject topics.

Course code -202 urban environment and planning

On completion of the course, students are able to,

1. Student is expected to understand the theoretical base of urban geography and planning.
2. Understand the urban morphology and functions with special reference to India and Uttarakhand.
3. Understand the central place system and regional development in India.
4. Understand the urban environmental problems in developing countries.
5. Understand the urban development planning and management.

Course code -203 Evolution and development of geographical thoughts

On completion of the course, students are able to,

1. Understand the basic concept, related geographical thoughts

2. Understand the major contribution of different geographical school of thoughts.
3. Understand the paradigms and changing paradigms in geography.
4. Understand the nature of dichotomies in geography.
5. Understand the modern techniques related remote sensing and GIS in geography.

Course code -204 Remote Sensing Applications

On completion of the course, students are able to,

1. Understand the basic function of remote sensing.
2. Understand the aerial photographs and photogrammetry.
3. Understand the digital image processing.
4. Understand the thermal and microwave remote sensing.
5. Understand the function of remote sensing applications in different terrain.

Semester III

Course code - 301 Environment Management and Sustainable Development

On completion of the course, students are able to,

1. Understand the meaning scope and significance of environment geography.
2. Understand the environment problems at global, regional and local levels.
3. Understand the environmental impact assessment with special reference to India.
4. Understand the concept and need of sustainable development
5. Understand the concept and approaches of environmental management.
6. Understand the environmental management in Uttarakhand Himalaya.

Course code–302 Agriculture Geography and Agro-Ecosystem

On completion of the course, students are able to,

1. Understand the nature, scope and significance of agriculture geography.
2. Understand the different agriculture types and their world distribution.
3. Understand the technique of agricultural

4. Understand the agriculture ecology and ecosystem.
5. Understand the management and planning in regional perspective.

Course code -303 Rural Development Planning

On completion of the course, students are able to,

1. Understand the meaning concept, scope of rural development and planning.
2. Understand the dimensions of rural economy.
3. Understand the paradigm of rural development.
4. Understand the rural development programs in India.
5. Understand the planning for, rural development.

Coursecode-304 Climate change, impact and adaptations in Himalaya

On completion of the course, students are able to,

1. Understand the concept of climate change.
2. Understand the trends of climate change in Himalaya.
3. Understand the climate change induced natural disasters.
4. Understand the climate change vulnerability and risk.
5. Understand the climate change adaptation in Himalaya.

Semester IV

Course code- 401 Advance Geography of Uttarakhand

On completion of the course, students are able to,

1. Understand the physical background of Uttarakhand.
2. Understand the population and settlement types & patterns of Uttarakhand.
3. Understand the present agricultural development.
4. Understand the mineral,energy resources and industry.
5. Understand the future prospects and development plans in UttarakhandHimalaya.

Course code- 402Population Geography and Human Resources Development

On completion of the course, students are able to,

1. Understand the fundamental of population geography

2. Understand the sources of population data.
3. Understand the different demographic traits.
4. Understand the courses and consequences of human migration.
5. Understand the population projection and human resource development planning.

Course code- 403Biogeography

On completion of the course, students are able to,

1. Understand the fundamental concepts related biogeography.
2. Understand the plant geography and plant succession.
3. Understand the zoogeography and biodiversity.
4. Understand the impact of climate change on flora and fauna with special reference to Uttarakhand Himalaya.
5. Understand the biotic resource management.

Course code- 406Disaster management

On completion of the course, students are able to,

1. Understand the fundamental of disaster management.
2. Understand the long term measures and utilization of resources.
3. Understand the response to disaster impact.
4. Understand the major impact factor.
5. Understand the regional pattern of disaster management.

PNG GOVT. PG COLLEGE RAMNAGAR NAINITAL

Department of Home Science

COURSE OUTCOME

B.A. First Year, Semester- 1

Paper-I: Fundamentals of Family Resource Management

After completion of the course, students are able to-

- Understand the meaning, scope and philosophy of Home Management and its significance in family living.
- Understand the motivating factors for management: Values, Goals and Standards along with various steps involved in Management Process including Planning, Controlling and Evaluation.
- Understand the concept of Family Resources and their Classification.
- Understand the objectives and principles of use of resources and their management.
- Understand the concept of Money Management, Sources of income and various types of income: Money, Real income and Psychic Income.
- Prepare a budget in view of family income.
- Understand the meaning of budget and purpose of savings and investments.

Paper II: Housing and Interior Decoration

After completion of the course, students are able to-

- Understand function of house, factors affecting the choice- size, organization, activities of family and its members with their financial positions.
- Understand the factors affecting selection of house site, public convenience and locality, types of soil and physical characteristics of the site.
- Understand the principles of planning a house aspect, prospect, privacy, grouping, roominess, flexibility, sanitation and circulation.
- Construct house plan with the use of principles of house planning for different income groups.
- Understand the elements and principals of art in Interior Decoration.
- Apply principles of art in interior decoration.
- Understand various types and styles of furniture, requirements and practical considerations while choosing furniture and different types of furniture arrangements.
- Understand how to select and use household linen: curtains, draperies, upholstery material and functional as well as decorative accessories.

Course Specific Outcome- After completion of the course, students will be able to understand the fundamental concepts of Family Resource Management, House Planning, Principals of Art and Interior Decoration.

B.A. First Year, Semester-II

06/04/21

Paper-1: Introduction to Textile Science

After completion of the course students are able to-

- Understand terminology of textile fibers, their classification, characteristics, history and their uses.
- Identify natural and manmade synthetic fibers.
- Understand the yarn construction process, types, stages of yarn construction and classification of yarn.
- Understand appropriate selection of clothes, care and storage of clothing.
- Understand concepts of labelling on clothes, their classification and symbols used for labelling.
- Understand general rules for washing, laundering and ironing, soaps, detergents, bleaches, blues, whitening agents as well as principals of dry cleaning, stain removal and hard and soft water.

Paper-II: Fabric Formation and Finishes

After completion of the course, students are able to-

- Understand the methods of fabric formation including basic weaves, woven and non-woven fabric construction and weaving.
- Understand the process of scouring, degumming, and carbonizing to remove impurities from fabrics.
- Understand basic, decorative and functional fabric finishes and their importance in clothing and textiles.
- Understand classification and characteristics of dyes, dyeing process: Plain dyeing, Batik dyeing and Tie-Dye dyeing.
- Understand various printing designing techniques used on finished fabrics: Block printing, Roller printing, Duplex printing, Resist printing, Screen printing and wrap printing.
- Understand the factors influencing color fastness and tests to determine color fastness.

Course Specific Outcome- After completion of the course, students are able to understand the science of Clothing and Textiles, types of fibers, their physical and chemical properties, construction process of yarns from fibers, fabric from yarns and fabric finishes to enhance decorative and functional properties of fabrics.

B.A. Second Year, Semester-III

Paper-I: Fundamentals of Food and Nutrition

After completion of the course, students are able to-

- Understand definitions used in foods and nutrition: Foods Nutrition and Nutrients.
- Understand classification and functions of food, basic food groups and food guide.
- Understand digestive system, phases of nutrients digestion- digestive absorption, metabolism and excretion of waste products.
- Understand the concept of balanced diet and factors affecting balanced diet.
- Understand factors affecting total energy requirements of the body and basal metabolism along with its definition and influencing factors to Basal Metabolic Rate.

06/04/21

- Understand classification of nutrients, micro and micro nutrients, their sources, functions, requirements, absorption, metabolism and related diseases.
- Understand the meaning of food poisoning and food adulteration and testing of food adulteration.

Paper II: Food Preservation

After completion of the course, students are able to-

- Understand meaning, objectives, aims and importance of cooking, various methods of coking and effect of heat on nutrients.
- Understand definition of food preservation, principal of food preservation and their importance.
- Understand preservation by use of heat, cold and chemical preservatives, salt and sugars.
- Understand prepare fruit juices, squashes, jams, jellies, sauces and pickles etc.
- Understand fermentation process, role of microorganisms and benefits of fermentation.

Course Specific Outcome- After completion of the course, students are able tounderstand the fundamentals of food and nutrition including nutrients, their function, dietary sources, diseases and human physiology, methods of cooking and effect on nutrients and food preservation methods.

BA Second Year, Semester-IV

Paper-I: Mother Craft and Child Care

After completion of the course, students are able to-

- Understand biological and physiological features of women for motherhood, psychological preparation and planned parenthood.
- Understand pregnancy, prenatal care, and importance of mother's health care, nutritive diet, clothing and other requirements.
- Understand various stages of prenatal development from conception to birth: Zygotic, Embryonic and fetal stages.
- Understand meaning of neonatal care, care of newborn, breast feeding, weaning and supplementary feeding, child rearing practices and immunization and treatment of common ailments.
- Understand meaning of infancy, babyhood and infant care.
- Understand patterns of growth and development in babyhood: physical, motor, emotional, language, speech and cognitive development.
- Understand characteristics of a problematic child, common childhood problems: negating, spoiling, jealousy, unsocial behavior, emotional outburst and accidents etc.
- Understand skills in play and significance of play for social development of the child.

Paper-II: Introduction to Clothing Construction

After completion of the course, students are able to-

- Understand sewing equipment and tools required for measurement, drafting, cutting and stitching.
- Understand parts of sewing machine with their use and care.
- Understand selection principals for fabric selection and clothing manufacturing.

Nirmala
06/04/21

- Understand construction processes including hard stitches, seam, seam finishing, plackets and disposal of fullness through darts and pleats.
- Understand prepare fabric for layout and cutting.
- Understand types of sleeves, collars, pockets and yokes.
- Understand importance and functions of clothe as well as clothing requirements for infants, toddlers, preschoolers, adolescent and women.

Course Specific Outcome- On completion of the course, students are able to understand meaning of prenatal care, pregnancy,infancy,mother craft and child care, clothing construction for infants,toddlers, preschoolers,adolescents and women.

BA Third Year, Semester V

Paper-I: Human Development

After completion of the course, students are able to-

- Understand development during different stages of life cycle, preschool period, physical growth and motor skills and development.
- Understand language, speech and social development, skills in play, influence of nursery school, home and environment on habits and development.
- Understand physical growth and health, motor, personality, social, emotional, cognitive, language interests and personality development, effect of peers, school and media and role of parent and teacher.
- Understand characteristics of puberty and adolescence, physical, social, emotional, cognitive and personality development, social problems of adolescence.
- Understand developmental characteristics of adulthood, social mobility and social adjustment, role adjustments, adjustments to parent-hood, single-hood, vocational adjustment and adjustment to loss of spouse and adjustment to retirement.
- Understand personal and social adjustments during old age as well as characteristic of old age, vocational and family hazards.

Paper-II: Family Welfare and Community Education

After completion of the course, students are able to-

- Understand child and family welfare, children's right and policies for children.
- Understand demographic profile of children in India and children with special needs: deprived children, abused children and juvenile delinquency.
- Understand functions of various child welfare services working at national and international level; C.S., W.B., ICCW, ICDS, WHO, UNICEF, CARE, ICCW and ILO.
- Understand rural extension services and community- ICDS, DWCRA, and IRDP.
- Understand family relationship, child-parent relationship, responsibilities and relationship of home, school and community.
- Understand role of teacher and other specialties in parents and community education programs.
- Understand role of teacher as motivator, community guidance of child-Youth ethical consideration in dealing with parents and community.

Course Specific Outcome- On completion of the course, students are able to understand social,physical,motor skill, language,cognitive and emotional development in various stages of life

Nirodha 1/04/21

cycle, functions of different national and international family welfare programs and community education.

BA Third Year, Semester VI

Paper-I: Nutritional Management in Health and Diseases

After completion of the course, students are able to-

- Understand meaning of health and nutrition, food Exchange list, meal planning and nutritional management.
- Understand nutritional management during pregnancy, lactation, infancy and preschool age.
- Understand nutritional management for school going children, adolescence, adulthood and old age.
- Understand nutritional care and diet management in diseased conditions: diarrhea, constipation, peptic ulcer, fever, diabetes- mellitus, hypertension, obesity etc.
- Understand meaning of dietetics and therapeutic nutrition.
- Plan a nutritious diet for patients suffering with various diseases.

Paper-II: Fundamental Concepts of Extension Education

After completion of the course, students are able to-

- Understand meaning, importance, need, aims, objectives characteristics and principals of extension education.
- Understand various extensive teaching methods of formal and informal education.
- Understand introduction, importance, origin, need and concept of Home Science Extension.
- Understand objectives, characteristics and principles of Home Science Extension Education.
- Understand role of home science in rural development and qualities as well as role of a home science extension worker.
- Understand meaning, definition types and process of communication.
- Understand elements of communication, their significance and characteristics.

Course Specific Outcome- On completion of the course, students are able to understand principles of dietetics and nutritional management in health and disease, fundamental concepts of rural development extension education, home science extension education and role of extension worker for rural development.

UNDER GRADUATE PROGRAM OUTCOME

On completion of three-yearUndergraduate Course Program in Home Science, students will be able to understand family resource management process, principles of art and interior decoration, houseplanning, clothing and textile science, fabric construction, fabric finishes and clothing construction process. They will become aware of importance of dietetics as well as nutrition science in human life. They can plan balanced diets for different age groups. They will be able to develop an understanding towards role of nutrition science, prenatal care, postnatal care,healthy child rearing practices and physiological and psychological adjustments in different stages of life. Students will better understand the objectives of family welfare programs and rural developmentthrough rendering extension education services. Conclusively, students will be able to

Nirodha
06/04/21

assimilate the knowledge stated above in their daily life which will lead towards healthy family and community living.

6/4/21

प्राचार्य

6/4/21

योग एवं वैकल्पिक चिकित्सा विभाग

राजकीय स्नातकोत्तर महाविद्यालय रामनगर (नैनीताल)

एम.ए. योग एवं वैकल्पिक चिकित्सा की उपादयेता

प्रथम सेमेस्टर

पेपर 1 (101)

योग के आधारभूत तत्व

- प्रस्तुत पेपर का अध्ययन करने को पश्चात
- योग शब्द का अर्थ परिभाषाओं का स्वरूप जाने राकेंगे।
- वैदिक काल उपनिषद्काल दर्शकाल, टीकाकाल में योग का आधार समझ सकेंगे।
- विभिन्न ग्रन्थों के आधार पर योग का स्वरूप को जान सकेंगे।
- भक्तिकाल के साथ योग के प्रकारों का वर्णन जान सकेंगे।
- समग्र स्वास्थ्य का अर्थ एवं वर्णन जान राकेंगे।

पेपर 2

हठयोग के सिद्वांत (102)

प्रस्तुत पेपर का अध्ययन करने के पश्चात

- हठ विद्या का अभ्यास करने के पश्चात सभी प्रकार के ताप एवं त्रिद्वंद के बारे में जान सकेंगे।
- शरीर के माध्यम से प्राण पर नियंत्रण करके संतुलित इच्छा कि ओर ले जाना हठयोग का मूल उद्देश्य है नाड़ी सान्तुलन के पश्चात सुषुम्ना जागरण ही हठयोग है इस अवस्था में इच्छा सकारात्मक रचानत्मक तथा आत्मोन्नति का कारण बनती है इरा प्रकार हठ योग सवर्तोमुखी उन्नति की प्रक्रिया जान सकेंगे ।

पेपर 3

मनोविज्ञान और योग का आधार (103)

प्रस्तुत पेपर का अध्ययन करने के पश्चात

- मनोविज्ञान का अर्थ परिभाषा और वैज्ञानिक सिद्धांत को जान सकेंगे।
- अनुभूति का अर्थ परिभाषा और वैज्ञानिक सिद्धांत को जान राकेंगे
- स्मरण शक्ति का अर्थ प्रकार जान राकेंगे।
- मनोविज्ञान और योग का सबंध एवं स्वन, सकारात्मक विचार, बुद्धिमत्ता को जान सकेंगे।

पेपर 4

शरीर रचना क्रिया विज्ञान और यौगिक अभ्यास (104)

प्रस्तुत पेपर का अध्ययन करने के पश्चात

- मानव शरीर की संरचना को स्पष्ट कर सकेंगे।
- कोशिकाओं की संरचना एवं कार्यों का विवेचन कर सकेंगे ।
- शरीर के तन्त्र श्वसन तन्त्र, रक्त परिवहन तंत्र, तंत्रिका प्रणाली, अंतःस्त्रावी प्रणाली, के बारे में जान सकेंगे और उनसे सम्बन्धित रोगो का योग के द्वारा उपचार जान सकेंगे ।

प्रायोगिक (105)

प्रस्तुत पेपर का अभ्यास करने के पश्चात्

- पाठ्यक्रम में बताये 42 आसनो का अभ्यास करने से शरीर लचिला बनेगा तथा विभिन्न रोगों में आसनों के प्रयोग को जान सकेगे ।
- सूर्य-नमस्कार एव नाडीशोधन, सूर्यभेदी, चंद्रभेदी, भ्रामरी जान सकेगे ।

प्रायोगिक (106)

- षटकर्म में जलनेति, रबरनेति, दमन, वातक्रम को जान सकेगे ।
- मुद्रा बंध – ज्ञान मुद्रा, चिन मुद्रा, विपरीतकरणी मुद्रा, जालधंर बंध, उड्डीयान बंध, मुल बंध को जान सकेगें ।

द्वितीय सेमेस्टर

पेपर 1

पतंजलि योग सूत्र (201)

प्रस्तुत पेपर का अभ्यास करने के पश्चात

- पंतजलि योग सूत्र का संक्षिप्त परिचय जान संकेगे
- योग सूत्र के चार अध्याय – समाधि पाद, साधन पाद, विभूति पाद कैवल्य पाद के बारे में जानकारी प्राप्त कर सकेंगें ।
- अष्टांग योग मे यम, नियम, आसन, प्राणायाम, प्रत्याहार, धारणा, ध्यान, समाधि के बारे में जान सकेगें ।
- यम नियम के अभ्यास से सामाजिक सुधार के बारे में जान सकेगे ।

पेपर 2

2 योग और व्यक्तिगत प्रबंधन (202)

प्रस्तुत पेपर का अभ्यास करने के पश्चात

- आत्म प्रबंधन का अर्थ प्रकृति सिद्धान्त के बारे में जान सकेगे ।
- आत्म विश्वास का अर्थ और आत्म विश्वास कैसे बढाये ।
- कैरियर विकास के बारे मे जान सकेगे ।
- ध्यान से स्मरण शक्ति को कैसे बढ़ा सकेगे ।
- तनाव के कारण प्रकृति, योग से तनाव पर कैसे प्रभाव पडेगा ।
- व्यक्तिगत प्रबंधन में योग का प्रभाव जान सकेगे ।

पेपर 3

3 योग एवं मानसिक स्वास्थ्य (203)

प्रस्तुत पेपर का अभ्यास करने के पश्चात

- मानसिक स्वास्थ्य का अर्थ, मानसिक बीमारी, जान सकेगे ।
- व्यक्तित्व के सिद्धान्त जान सकेगे ।
- योग के द्वारा मानसिक स्वास्थ्य को ठीक करना जान सकेगे ।

योग के मौलिक ग्रंथ (204)

प्रस्तुत पेपर का अभ्यास करने के पश्चात

- भगवत गीता में योग का अर्थ, परिभाषा, प्रकृति के बारे में विस्तार से जान सकेंगे ।
- उपनिषद मे योग की उपयोगिता जान सकेंगे ।
- ध्यान बिन्दु उपनिषद में ब्रह्म, ओम, आत्म ध्यान के बारे मे विस्तृत जानकारी प्राप्त कर सकेंगे ।
- सांख्यकारिका मे प्रकृति, पुरुष अन्तकरण के बारे मे जानकारी प्राप्त कर सकेंगे ।

पेपर 5

प्रायोगिक (205)

प्रस्तुत पेपर का अभ्यास करने के पश्चात्

- पाठयक्रम में बताये 20 आसनो का अभ्यास करने से शरीर लचिला बनेगा तथा विभिन्न रोगों में आसनों के प्रयोग को जान सकेगे ।
- सूर्यनमस्कार एव नाडीशोधन, सूर्यभेदी, चंद्रभेदी, भ्रामरी, शीतली, शीतकारी जान सकेगे।

प्रायोगिक (206)

- षटकर्म में जलनेति, रबरनेति, वमन, वातकम को जान सकेगे ।
- मुद्रा बंध – ज्ञान मुद्रा, चिन मुद्रा, विपरीतकरणी मुद्रा, शाम्भवी मुद्रा, प्राण मुद्रा, काकी मुद्रा, जालधंर बंध, उड्डीयान बंध, मुल बंध योग को जान सकेगें ।

तृतीय सेमेस्टर

पेपर 1

प्राकृतिक चिकित्सा के सिद्धान्त (301)

प्रस्तुत पेपर का अभ्यास करने के पश्चात

- प्राकृतिक चिकित्सा का अर्थ व परिभाषा, इतिहास का अध्ययन कर सकेंगे ।
- दिनचर्या, रात्रिचर्या, ऋतुचर्या के बारे में जानकारी प्राप्त कर सकेंगे ।
- रंग चिकित्सा, उपवास, मसाज चिकित्सा, योग चिकित्सा, एनिमा, आदि चिकित्सा के बारे में जान सकेंगे ।

पेपर 2

अनुसंधान क्रियाविधि (302)

प्रस्तुत पेपर का अभ्यास करने के पश्चात

- सांख्यिकीय का परिचय एवं सिद्धान्त
- सामान्य वितरण का अर्थ एवं महत्व, पूर्ण व्याख्यान जान सकेंगे ।
- मध्य, मध्यिका, बहुलक की जानकारी प्राप्त कर सकेंगे ।
- टी – टेस्ट की जानकारी
- वैज्ञानिक सिद्धान्त – अवलोकन सिद्धान्त, प्रयोगात्मक सिद्धान्त, राह संबंध सिद्धान्त का वर्णन
- रिसर्च डिजाइन का अर्थ, भेद, विशेषताएं का विस्तार से जानकारी प्राप्त कर सकेंगे।

पेपर 3

योग एवं आयुर्वेद (303)

प्रस्तुत पेपर का अभ्यास करने के पश्चात।

- आयुर्वेद की परिभाषा, इतिहास, सिद्धान्तों का विस्तार से वर्णन।
- स्वास्थ की परिभाषा।
- आयुर्वेद के अनुसार आहार की परिभाषा की जानकारी ।
- पंच कर्म की पूर्ण जानकारी प्राप्त कर सकेंगे ।

पेपर 4

योग अभ्यास की शिक्षण विधि (304)

प्रस्तुत पेपर का अभ्यास करने के पश्चात

- शिक्षण अभ्यास की परिभाषा, सिद्धान्त, महत्व के बारे मे जानकारी ।
- योग में शिक्षण अभ्यास का प्रयोग।
- शिक्षा प्रबंध, लेशन प्लान की विस्तृत जानकारी।
- प्रस्तुतीकरण तकनीक प्रदर्शन की विधि, सूक्ष्म शिक्षण का विस्तार से वर्णन ।

पेपर 5

प्रायोगिक (305)

प्रस्तुत पेपर का अभ्यास करने के पश्चात्

- पाठ्यक्रम में बताये 15 आसनो का अभ्यास करने से शरीर लचिला बनेगा तथा विभिन्न रोगों में आसनों के प्रयोग को जान सकेगे ।
- सूर्यनमस्कार एव भस्त्रिका प्राणायाम, नाडीशोधन, सूर्यभेदी, चंद्रभेदी, आगरी, शीतली, शीतकारी जान सकेगे।
- षटकर्म में जलनेति, रबरनेति, वमन, वातकम को जान सकेगे ।
- मुद्रा बंध – शक्तिचालीनी मुद्रा, अश्वि-नी मुद्रा, ज्ञान मुद्रा, चिन मुद्रा, विपरीतकरणी मुद्रा, शाम्भवी मुद्रा, प्राण मुद्रा, काकी मुद्रा, जालधंर बंध, उड्डीयान बंध, मुल बंध योग को जान सकेगें ।

प्रायोगिक (306)

- शिक्षण अभ्यास, प्राकृतिक चिकित्सा, परियोजना कार्य, आदि के बारे में जानेगे ।

चतुर्थ सेमेस्टर

पेपर 1

वैकल्पिक चिकित्सा (401)

प्रस्तुत पेपर का अभ्यास करने के पश्चात

- वैकल्पिक चिकित्सा का अर्थ, संभावना, सिमाये एवं वैकल्पिक चिकित्सा का महत्व जान सकेंगे।
- प्राण का अर्थ, प्रकृति, प्राणिक हिलींग का इतिहास, ऊर्जा के केन्द्र, प्राणिक उपचार के विभिन्न तरीके जान सकेंगे ।
- चुंबक चिकित्सा का अर्थ, परिभाषा, प्रकृति, संभावना, सिमायें, सिद्धान्त, चुंबक चिकित्सा का उपचार जान सकेंगे ।

पेपर 2

योग और थैरेपि (402)

प्रस्तुत पेपर का अभ्यास करने के पश्चात

- योग आसन, प्राणायाम, षटकर्म के द्वारा विभिन्न बिमारियों के उपचार के बारे में जान सकेंगे ।?

पेपर 3

स्वस्थ आहार और पोषण (403)

प्रस्तुत पेपर का अभ्यास करने के पश्चात

- स्वास्थ्य प्राप्ति में आहार की भूमिका तथा विभिन्न पोषक तत्वों को जान सकेंगे।

पेपर 4

लघु शोध (403)

प्रस्तुत पेपर का अभ्यास करने के पश्चात

शोध के बारे में जान सकेंगे ।

पेपर 5

प्रायोगिक (405)

प्रस्तुत पेपर का अभ्यास करने के पश्चात्

- पाठयक्रम में बताये 15 आसनो का अभ्यास करने से शरीर लचिला बनेगा तथा विभिन्न रोगों में आसनों के प्रयोग को जान सकेगे ।
- सूर्यनमस्कार एव चरित्रका प्राणायाम, नाडीशोधन, सूर्यभेदी, चंद्रभेदी, भ्रामरी, शीतली, शीतकारी जान सकेगे।
- षटकर्म में जलनेति, रबरनेति, धमन, वाराक्रम को जान सकेगे ।
- मुद्रा बंध - शक्तिचालीनी मुद्रा, अश्विनी मुद्रा, ज्ञान मुद्रा, चिन मुद्रा, विपरीतकरणी मुद्रा, शाम्भवी मुद्रा, प्राण मुद्रा, काकी मुद्रा, जालधंर बंध, उड्डीयान बंध, मुल बंध योग को जान सकेगें ।

प्रायोगिक (406)

- शिक्षण अभ्यास, प्राकृतिक चिकित्सा, परियोजना कार्य, आदि के बारे में जानेगे ।

विभागीय प्रभारी

प्रभारी एम०ए० योग

प्राचार्य
स्नातकोत्तर महाविद्यालय
जसनगर (बीकानेर)

Department of B.Ed.

Course Outcomes

Semester First

Course Code B-101

Name of the course- PHILOSOPHICAL AND SOCIOLOGICAL PERSPECTIVES OF EDUCATION

Paper Outcomes-

The learner's shall be able-

- To assimilate and put to practice knowledge of philosophical and sociological bases of education.
- To understand the concept of education
- To identify the relationship between educational philosophy and sociology.
- To know and appreciate the contribution of philosophical thinkers.
- To understand the social processes in the society.
- To distinguish among culture, acculturation and enculturation.

Course Code B-102

Name of the course- PSYCHOLOGY OF DEVELOPMENT AND LEARNING

Paper Outcomes-

The learner's shall be able-

- To acquire knowledge of various theories of psychological development and their application in the field of education.
- To understand the salient features of growth and development during different stages.
- To know the factors influencing the process of growth and development in order to organize teaching for effective learning.
- To acquaint with the theories of motivation, personality and the concept of intelligence.

- To understand the salient features of growth and development during different stages.
- To know the factors influencing the process of growth and development in order to organize teaching for effective learning.
- To acquaint with the theories of motivation, personality and the concept of intelligence.
- To understand the importance of groups, its formation and working style.

Course Code B-103

Name of the course- PRINCIPLES AND METHODS OF TEACHING

Paper Outcomes-

The learner's shall be able-

- To learn and apply various teaching skills in class room.
- To develop communication skills for effective teaching.
- To know about the various models of teaching.
- To understand various methods and techniques of teaching.
- Be prepared to inculcate desirable components of teaching, skills and models of teaching.

Course Code EPC-104

Name of the course- LANGUAGE ACROSS CURRICULUM

Paper Outcomes-

The learner's shall be able-

- To strengthen their language foundation.
- To critically understand the role of language in text books.

- To understand the role and importance of language in teaching learning.
- To enhance their ability to use language across different curricular areas.

Course Code EPC-105

Name of the course- PSYCHOLOGICAL TESTS

Paper Outcomes-

The learner's shall be able-

- To provide knowledge of theoretical background of selected psychological tests.
- To acquaint students with the procedure of administering the psychological tests.
- To understand application and related aspects of psychological tests.
- To analyze test-results with a view to understand child psychology, learning needs and teaching strategy.

Department of B.Ed.

Course Outcomes

Semester Second

Course Code B-201-A

Name of the course- PEDAGOGY OF MATHEMATICS

Paper Outcomes-

The learner's shall be able-

- To understand the language and symbolism of mathematics as a discipline.
- To develop the pedagogical understanding of mathematics in context of school and learner
- To critically explore methods and techniques of mathematics teaching.
- To conduct action research in mathematics teaching.
- To facilitate philosophical and epistemological insight of mathematics teaching in pupil teacher.

B-201-B- PEDAGOGY OF PHYSICAL SCIENCES

OBJECTIVES : The pupil teacher will be able

. To develop the pedagogic understanding of pupil-teacher in sciences in context of school and learner.

. To equip student teacher to promote understanding of sciences in learners.

.To organize pedagogic study of subjects in sciences at school level in collective way.

.To enrich knowledge and teaching competency of pupil teacher.

. To equip pupil teacher with necessary skills for acting as mediator between school and society.

B-201-C- PEDAGOGY OF BIOLOGICAL SCIENCE

OBJECTIVES : The pupil teacher are able

. To acquire an understanding of and to contribute towards curriculum development as a reflective practitioner.

. To apply learning experiences and educational aids to teaching biology in the classroom.

.To enable to understand the forward linkages through an exposure to possible course/ vocations options after school.

.To develop competencies, skills and abilities needed to transact critically analyze and evaluate the biology curriculum.

. To develop teaching skills for conducting theory and practical lessons.

. To develop conceptual understanding related to the pedagogy of biological sciences.

.To develop scientific attitude among the learner.

. To understand the nature of biology its aims, values objectives of teaching biological sciences.

. To understand the different strategies of teaching biological sciences.

B-201-D- PEDAGOGY OF ENGLISH

OBJECTIVES :

. To understand the nature and characteristics of English language.

. To insight into general theories of language development.

. To understand the traditional as well as modern techniques and methods of teaching English and find ways as to how they could effectively be used in the classroom.

. To know how to plan different types of lessons in English with the helps of the given guidelines and execute the same in a classroom situation.

. To develop through familiarity with the various textual items like prose, poetry , short stories , etc. And how they can be used for conducting various learning activities.

B-201-E- हिन्दी शिक्षण पाठ्यक्रम

- हिन्दी शिक्षण पाठ्यक्रम के उद्देश्य: –
- भाषा के महत्व से अवगत कराना ।
- शुद्ध साहित्य सृजन के गुणों का विकास कराना।
- शुद्ध भावाभिव्यक्ति की योग्यता का विकास करना ।
- भाषायी कुशलता का विकास करना ।
- हिन्दी की विभिन्न विधाओं से अवगत कराना ।
- भाषा शिक्षण की विधियों से अवगत कराना ।
- हिन्दी पाठन ,लेखन, उच्चारण और वर्तनी की शुद्धता से अवगत कराना ।
- हिन्दी शिक्षण की नवीन विभिन्न सहायक सामग्रियों से अवगत कराना ।
- हिन्दी में मूल्यांकन की दक्षता से अवगत कराना ।
- हिन्दी में पाठ्य -सहगामी क्रियाओं से अवगत कराना ।

B-201 F- PEDAGOGY OF SOCIAL STUDIES

OBJECTIVES :

.To understand the foundation of teaching social studies.

. To review the curriculum of social studies at secondary and higher

secondary level.

. To acquaint with different strategies for teaching social studies at secondary and higher secondary level.

.To acquire skills of analyzing social studies text books.

.To acquire skills of preparing teaching aid for teaching social studies.

.To acquire competence in preparing evaluation tool in social studies.

. To prepare achievement test in social studies at secondary and higher secondary level.

. To acquaint with Action Research in social studies.

.To prepare lesson plans in social studies for instructional purposes.

.To provide Knowledge related to culture and civilization.

.To beget the education of Democracy.

. To help young people make informed and reasoned decisions for the public goods or good as a citizens of a culturally diverse, democratic society in an interdependent world.

Semester Second

Course Code B-202

Name of the course- SCHOOL ADMINISTRATION AND MANAGEMENT

Paper Outcomes-

The learner's shall be able-

- To understand the concept of school organization, administration and management.
- To understand the meaning , purpose and characteristics of school as an organization
- To identify and analyze the educational structure in India.
- To identify various innovations in class room management.
- To acquaint the learner with administrative structure and various schemes related to education.

Course Code B-203

Name of the course- EDUCATIONAL TECHNOLOGY AND ICT

Paper Outcomes-

The learner's shall be able-

- To familiarize student-teachers with fundamentals of educational technology.
- To make student-teachers aware of use of educational technology, ICT, Mass-media and multimedia.
- To develop skills to use multimedia.
- To enable student-teacher in using ICT for solving educational problems.

Semester Second

Course Code EPC-204

Name of the course- TECHNOLOGY ENABLED LEARNING

Paper Outcomes-

The learner's shall be able-

- To develop knowledge and ability to wield ICT tool and devices.
- To provide skills in organizing and creating digital resources.
- To enable learners for safe and secure use of ICT.
- To integrate ICT into teaching-learning and evaluation process.
- To use ICT for effective educational management.

Semester Second

Course Code EPC-205

Name of the course- SIMULATED MICRO AND SUPERVISED TEACHING

Paper Outcomes-

The learner's shall be able-

- To provide opportunities for practicing teaching skills in real class rooms.
- To provide an opportunity to learn the art of teaching through simulated technique.
- To learn to develop and maintain teaching-learning resources.
- To provide opportunities to develop skills of preparing suitable lesson plans.
- To develop effective teaching-learning material.

Department of B.Ed.

Course Outcomes

Semester Third

Course Code B-301-A

Name of the course- PRE-INTERNSHIP AND SCHOOL OBSERVATION

Paper Outcomes-

The learner's shall be able-

- To provide student-teachers an opportunity to observe ongoing curricular and co-curricular activities in a school.
- To provide student-teachers an opportunity to participate and organize different activities in the school.
- To provide student-teachers an opportunity to observe various records maintained in school.
- To prepare student-teachers to join internship with full understanding of school and awareness for their different roles.
- To attain a reflective attitude for improvement in different practice adopted in school.

Course Code B-301-B

Name of the course- INTERNSHIP

Paper Outcomes-

The learner's shall be able-

- To provide student-teachers an opportunity to understand the workings of school organizations.
- To develop skills of dealing with students in real class.
- To provide student-teachers an opportunity to perform different responsibilities inherent in the role of teacher.
- To provide student-teachers an opportunity to learn skill of handling different school records.

Course Code B-302-A

Name of the course- GENDER, SCHOOL AND SOCIETY

Paper Outcomes-

The learner's shall be able-

- To develop basic understanding and familiarity with key concepts related to gender bias and parity.
- To develop understanding of how gender and sexuality relate to education.
- To develop a gender perspective in the field of education.
- To appreciation of the significant role of women in society.
- To undertake curriculum and text analysis from gender lens.

Course Code B-302-B

Name of the course- TEACHER AND ENVIRONMENTAL EDUCATION

Paper Outcomes-

The learner's shall be able-

- To develop understanding with respect to environmental issues surrounding us.
- To make student-teachers understand the role of teachers, students and community in protection and conservation of environment.
- To acquire global understanding of issues related to climate change.
- To organize various activities for conservation of environment.
- To develop sensitivity towards their responsibility for environmental conservation.
- To discuss techniques for reducing adverse effect of climate change.

Course Code B-303

Name of the course- COMMUNITY WORK

Paper Outcomes-

The learner's shall be able-

- To facilitate and motivate learners engagement in community work.
- To develop ability to assess needs of learner in their socio-cultural context.
- To create awareness among student-teachers for development of self and community.
- To involve community members in awareness and educational development programs.
- To participate and organize specific community programs to facilitate positive changes in community.

Department of B.Ed.

Course Outcomes

Semester Fourth

Course Code B-401

Name of the course- EDUCATION IN CONTEMPORARY INDIAN SOCIETY

Paper Outcomes-

The learner's shall be able-

- To facilitate development of understandings related to concept of education in contemporary Indian society.
- To develop knowledge about various developments in education at secondary level during post independence period in India.
- To enable learner in exploring various issues of Indian educational system.
- To identify different problems of secondary education and issues.
- To appreciate diverse perspectives on different issues of education.
- To help understand the relationship between education and society thruoghg exploring education during different historical period.

Course Code B-402

Name of the course- SCHOOL CURRICULUM DEVELOPMENT

Paper Outcomes-

The learner's shall be able-

- To explain the concept and objectives of curriculum development
- To acquaint learners with the Indian context of curriculum development.
- To provide knowledge of principles, approaches and models of curriculum development.
- To discuss approaches and principles of curriculum development.
- To develop understanding as to how curriculum development can be linked to innovation and change.

Course Code B-403

Name of the course- MEASUREMENT AND EVALUATION

Paper Outcomes-

The learner's shall be able-

- To introduce student-teachers with scientific meaning and methods of evaluation and measurement.
- To enable students-teachers to construct good questions for relevant testing and evaluation.
- To know the history of evaluation and its current practices.
- To emphasize the need to view assessment as an aspect of learning.
- To equip student-teachers with skills in statistical analysis and interpretation of school examination results.

Course Code B-404

Name of the course- INCLUSION IN SCHOOL EDUCATION

Paper Outcomes-

The learner's shall be able-

- To develop an understanding of concepts, principles and development of inclusive education in India.
- To explain various types of special children.
- To provide knowledge of skills, rolls, responsibilities and qualities of an inclusive teacher.
- To enable students to understand the importance of guidance and counselling in inclusive education.
- To analyze various programs of teacher preparation for inclusive education.

Department of Commerce

Course outcomes

B.Com. First semester

Paper I- Principles of management

On completion of the course, students will be able to

- Understand the concept and function of management
- Understand the object and importance of planning
- Understand the utility of Management by Objectives
- Understand the objectives and types of Organization
- Understand the merits and demerits of Centralization and Decentralization of authorities

Paper II - Financial Accounting

On completion of the course, students will be able to

- Understand of meaning and scope of accounting
- Understand the importance of Double Entry system of Accounting
- Understand about Insolvency Act 1909 and 1920
- Understand about Royalty system and copyright system
- Understand about the Indian partnership act

Paper III - Fundamental of Statistics

On completion of the course, students will be able to

- Understand the meaning and importance of Statistics and its limitations
- Understand the objectives and uses of Mean, Median and Mode
- Understand the uses and importance of Mean Deviation and Standard Deviation

- Understand the uses of Geometric Mean and Harmonic Mean and able to understand the difference between simple average and weighted average
- Understand the uses of Rank Correlation and Coefficient of Correlation along with their uses and limitations
- Understand about National Income And Population Census

Paper IV - Business Regulatory Framework

On completion of the course, students will be able to

- Understand the nature and types of Contract explained under Indian Contract Act 1872
- Understand about fair consideration and Free Consent of Party
- Understand about Agency contract terms
- Understand about Warranty, Transfer of Property and Unpaid Seller under Sale of Goods Act 1930
- Understand about negotiable Instrument like Crossing the cheque, endorsement of cheque and depositing process of cheque

B.Com. Second semester

Paper I- Advanced Financial Accounting

On completion of the course, students will be able to

- Understand about types of shares and debentures along with their issue and forfeiture process
- Understand about interest calculation process on investment made by individuals
- Understand about calculate profit on complete and incomplete voyage
- Understand about how to calculate claim under loss of stock and loss of profit policy
- Understand about difference between Banking companies and General Insurance Companies

Paper II - Business Environment

On completion of the course, students will be able to

- Understand about nature and importance of business environment
- Understand about Economic, Socio Cultural, Political and Legal environment of business
- Understand about factors affecting economic development
- Understand about objectives of NITI Aayog
- Understand about Fiscal and Monetary Policy of India
- Understand about function and objectives of WTO, IMF and World Bank

Paper IiI - Company Law

On completion of the course, students will be able to

- Understand about Characteristics and Essential features of company
- Understand about types of company
- Understand about Article of Association and Memorandum of Association of Company
- Understand about the types of directors of company along with their rights and duties
- Understand about winding up process of company and Power and duties of a Liquidators

Paper IV- Business Economics

On completion of the course, students will be able to

- Understand about Micro and Macro Economics
- Understand about consumer behavior and Marginal utility
- Understand about Law of demand and Supply
- Understand about factors related to production
- Understand about Total Cost , Average Cost and marginal cost of a product
- Understand about Monopolistic competition and perfect competition

B.Com. IIIrd Semester

Paper I- Basic Business Finance

On completion of the course, students will be able to

- Understand about scope and functions of Management
- Understand about financial goal – Profit Maximization Vs. Wealth Maximization
- Understand about over capitalization and under capitalization
- Understand about capital structure of company determination of capital structure
- Understand about significance of cost of capital and calculation process of Cost of different types of Source of capital
- Understand about types, uses, importance and limitation of Ratios
- Understand about dividend policy of a company

Paper II- Income tax law and accounts

On completion of the course, students will be able to

- Understand about Assessment and Previous year and different heads of income of an individual
- Understand about residential status and casual income
- Understand about incomes exempted from tax
- Understand about calculation method interest on loan taken for self occupied house and let out house
- Understand about short term and long term income of capital assets
- Understand about other incomes taxable other sources head

Paper III - Cost Accounting

On completion of the course, students will be able to

- Understand about nature, objectives, importance and limitation fo cost accounting
- Understand about ideal system of cost accounting
- Understand about different elements of cost and Idle Time and Over Time
- Understand about Tender price and quotation price of article manufactured by company
- Understand about contract account and sub contract account, and calculation of profit on complete and incomplete contract
- Understand about reconciliation of profit of cost Account with financial accounts

Paper IV - Industrial Law

On completion of the course, students will be able to

- Understand about The Factory Act 1948
- Understand about The Indian Trade Union Act 1926
- Understand about The Industrial Disputes Act 1947
- Understand about The Payment of Wages Act 1936
- Understand about The Payment of Bonus Act 1965
- Understand about The Gratuity Act 1979

B.Com. IVth semester

Paper I- Income tax law and accounts

On completion of the course, students will be able to

- Understand about the acts and provisions of Income tax Act
- Understand about the assessment of H.U.F , Firms and companies

- Understand about the computation of total income and tax liabilities of various individuals
- Understand about the basic procedure of tax deducted at source
- Understand about how the various income tax authorities work and operate

Paper II - Advanced Cost Accounting

On completion of the course, students will be able to

- Understand accounting treatment of various cost concepts and their application
- Understand about the process costing and apportionment of expenses
- Understand about the operating costing in various fields
- Understand about the various budgetary methods and control system
- Understand about the variance analysis

Paper III - Money, Banking & Foreign Exchange

- Understand about the basic concept of money and its various theories
- Understand about the Banking System in India
- Understand about changing dimensions of banking in India
- Understand about the role and credit control measures of RBI
- Understand about Foreign Exchange, exchange control and methods of exchange control
- Understand the fiscal measures of inflation and deflation

Paper IV - Public Finance

On completion of the course, students will be able to

- Understand the role and importance of Public Finance in National Economy
- Understand about the Public Revenue
- Understand about the various sources of public revenue
- Understand about the taxation
- Understand about the Public Debt and its effects
- Understand about the Public Expenditure, classifications and its effects on Indian Economy
- Understand about the objectives and tools of Fiscal Policy
- Understand about the Finance Commission and federal finance structure in India
- Understand about the Deficit Financing

B.Com. Vth semester

Paper I - Management Accounting

On completion of the course, students will be able to

- Understand about the nature, role and importance of Management Accounting
- Understand in analyzing various financial statements on comparative basis by various methods
- Understand about the basic concept of Marginal Costing and its implementation in various decision making
- Understand the B.E.P analysis and uses of contribution
- Understand about the objects and needs of reporting to management

Paper II - Marketing Management

On completion of the course, students will be able to

- Understand about the nature and concepts of Marketing
- Understand about the Market Segmentation
- Understand about the Marketing Mix
- Understand about the various strategies of product development and its pricing decisions
- Understand about the distribution channel of marketing
- Understand about the Consumer Behaviour, consumer satisfaction and various buying decisions

Paper III - Auditing

On completion of the course, students will be able to

- Understand about the objectives, importance and limitations of audit
- Understand about the various types of Audit
- Understand about the importance of Audit Planning and working papers
- Understand about the procedure of vouching and verification of various assets & liabilities through vouching
- Understand about the clear and qualified report of audit

Paper IV - Insurance Law & Practice

On completion of the course, students will be able to

- Understand about the nature, importance, functions and limitations of insurance
- Understand about the various basic principles of Life Insurance
- Understand about the various basic principles of Marine Insurance
- Understand about the various basic principles of Fire Insurance

- Understand about the various basic principles of Motor Insurance
- Understand about the various basic principles of Workmen Compensation

B.Com VI Semester

Paper I - Corporate Accounting

On completion of the course, students will be able to

- Understand about the nature of Goodwill and its valuation methods
- Understand about the nature of Shares and its valuation methods
- Understand about the sources of funds and procedure of payment under liquidation of company
- Understand about the purchase consideration, capital reserve and goodwill in the books of buyers' and sellers'
- Understand about restructuring of companies

Paper II- Financial Management

On completion of the course, students will be able to

- Understand about the nature, scope and goals of financial management
- Understand about the Working Capital and its management
- Understand about the different dimensions of working capital management
- Understand about the importance and kinds of leverage
- Understand about the nature and importance of Capital Expenditure Budgeting and its different methods
- Understand about the funds flow analysis

Paper III - Human Resource management

On completion of the course, students will be able to

- Understand about the objectives and functions of HRM
- Understand about the Recruitment and selection procedure
- Understand about the need and importance of Training program
- Understand about the objectives and methods of job evaluation
- Understand about the causes and principles of grievance and procedure of grievance redressel machinery

Paper IV - Financial Markets and Institutions

On completion of the course, students will be able to

- Understand about the financial system of Indian market
- Understand about the Money Market of India, Primary and secondary markets for money market instruments
- Understand about the constituents and instruments of primary markets, and underwriters commission
- Understand about the constituents and instruments of secondary markets, and Indian Stock Markets
- Understand about the functions and importance of Indian Financial Institutions like IDBI, SIDBI AND IFCI

M.Com Ist SEMESTER

Paper I- Business Management

On completion of the course, students will be able to

- Understand about the concepts and theories of Management and Social Responsibility of managers
- Understand about the concept and process of planning

- Understand about the authority -responsibility relationship
- Understand about the process of staffing and controlling
- Understand about the Motivation and Leadership
- Understand about the proper use of Communication
- Understand about the importance of team development

Paper II – Statistical Analysis

On completion of the course, students will be able to

- Understand about the trend and fluctuation
- Understand about the simple regression and linear relationship
- Understand about the association of different variables and their cause and effect relationship
- Understand about the concept of interpolation and extrapolation
- Understand about the measurement of National Income

Paper III - Economics of Growth

On completion of the course, students will be able to

- Understand about the characteristics of economic growth and development
- Understand about the Capital Formation through fiscal and monetary measures
- Understand about the various theories of development
- Understand about the determination of various economic growth measures
- Understand about different model theories of economic growth

Paper IV - Business Environment

On completion of the course, students will be able to

- Understand about the nature and components of Business Environment
- Understand about the Environmental Analysis and Scanning
- Understand about the Economic System and Economic Reforms
- Understand about the Political and Legal environment of business
- Understand about the Socio-Cultural environment and various International Institutions

M.Com II Semeater

Paper I Organisational Behaviour

On completion of the course, students will be able to

- Understand about the concept and significance of Organisational Behaviour
- Understand about the concept of Group Dynamics and process of Group Formation and its types
- Understand about the various types of Organisational Change
- Understand about the concept, features and process of Organizational Development
- Understand about the various types and approaches of Organizational Conflicts

Paper II-Income Tax

On completion of the course, students will be able to

- Understand about the Exemptions and Deductions under Income Tax Act 1961
- Understand about the assessment of Individuals and computation of their tax liability

- Understand about the assessment of H.U.F & Firms
- Understand about various provisions of Income Tax & set-off and carry forward of losses
- Understand about the deduction and collection of tax

Paper III- Corporate Merger & Acquisition

On completion of the course, students will be able to

- Understand about the concept of merger and acquisition and various investment measures
- Understand about various theories and types of mergers
- Understand about various capital investment methods and decisions
- Understand about various case studies related to Mergers & Acquisition in India
- Understand about the Legal provisions under Mergers & Acquisition

Paper IV - International Business

On completion of the course, students will be able to

- Understand about the nature, types and scope of International Business
- Understand about the importance and scope of International Trade
- Understand about various measures adopted by Government in International Trade
- Understand about the importance and working of various international institutions
- Understand about the various International trade related transactions

M.Com IIIrd Semester

Paper I- Corporate Tax Planing

On completion of the course, students will be able to

- Understand about the basic elements, objectives and limitations of Tax Planning in Corporate sector
- Understand about the Tax Avoidance and Tax Evasion
- Understand about the computation of tax in corporate sector and its assessment regarding calculation of Minimum Alternative Tax. Dividend Distribution Tax
- Understand about the various tax concessions and incentives measures in corporate decisions regarding new set-up of business
- Understand about the Tax Planning in Financial Management
- Understand about the concept of Tax Planning in various Investment Decisions and leverage decision making concerning purchase deals, renovation, shutting down e.t.c
- Understand about the concept of tax planning in respect of Amalgamation of companies

Paper II - Advance Cost Accounting

On completion of the course, students will be able to

- Understand about the basic objects, importance and functions of Cost Accounting
- Understand about the accounting treatment of inventory, labour turnover and treatment of various overheads
- Understand about the Costing treatment in tender price
- Understand about the Costing treatment in Process Costing

- Understand about the Costing treatment in service sector
- Understand about the latest developments in Cost Accounting.

Paper III - Financial Institutions and Markets

On completion of the course, students will be able to

- Understand about the Financial System In India and its effects on Economic Development
- Understand about the characteristics and working of Money Market and Capital Market
- Understand about the credit control measures and functions of RBI and various investment policies of Commercial Bank
- Understand about the recent development in Commercial Banking
- Understand about the concepts, objectives, functions and promotional activities of various Development Banks
- Understand about the sources and schemes of Non-Banking Financial Institutions
- Understand about role and working of SEBI

Paper IV- Research Methodology

On completion of the course, students will be able to

- Understand about the objectives and methodology of research process and various sources of collection of data
- Understand about the measurement of various research design techniques
- Understand about the test of Hypotheses through Parametric and non Parametric test
- Understand about the basic principles Of ANOVA

- Understand about the techniques and interpretation of Report Writing and various mechanism applied and layout used in Report Writing

M.Com IV Semester

Paper I- Corporate Accounting

On completion of the course, students will be able to

- Understand about the basic concepts of Amalgamation, Absorption and Reconstruction
- Understand about the methods of Valuation of Goodwill and Shares
- Understand about the concept of accounting relating to Liquidation of Companies
- Understand about the accounting methods relating to Holding Company
- Understand about the accounting principles of Price Level Changes

Paper II- Accounting for Managerial Decision

On completion of the course, students will be able to

- Understand about the concept, nature, objectives and limitations of Management Accounting and various responsibility centers
- Understand about the Budget and its various types
- Understand about Performance Budgeting and Zero-Base Budgeting
- Understand about the Standard Costing and Variance Analysis
- Understand about the Marginal Costing and Absorption Costing and their application in decision making

- Understand about the analysis and comparison of various financial statements with reference to Ratio-Analysis
- Understand about the concept of Reporting Techniques adopted by management

Paper III- Marketing Management

On completion of the course, students will be able to

- Understand about the importance, nature and concept of Marketing
- Understand about the Marketing Mix
- Understand about the Product Planning and Product Development
- Understand about the Branding and Labeling of products through packaging
- Understand about the Consumer Behavior and factors affecting their Buying Decision Making
- Understand about the Pricing Strategies and Policies in pricing the products
- Understand about the distribution channel of marketing
- Understand about the concept of Promotional tools in terms of Advertising and Personal Selling
- Understand about the meaning and scope of Marketing Research
- Understand about the Recent issues and Developments in Marketing of services

Paper IV - Advertising and Sales Management

On completion of the course, students will be able to

- Understand about the nature and scope of Advertising and its various aspects
- Understand about the Advertising and Consumer Behavior

- Understand about the Advertising Plan and its various tactics
- Understand about the effectiveness of measuring Advertising
- Understand about the objectives of Sales Management and role and responsibilities of Sales Manager in Sales Organization
- Understand about the Selection and Development of Sales Force and their Training according to sales territories and Quotas
- Understand about the supervision of salesperson through meetings and Contests

आचार्य
एम० स्नातकोत्तर महाविद्यालय
[illegible] नैनीताल

P.N.G.GOVT.P.G.COLLEGE RAMNAGAR
DEPARTMENT OF HISTORY
GRADUATION AND POST GRADUATION

Programme Outcomes (History)	• Without the proper knowledge of the past history of a society neither the proper understanding of present is possible nor the future, appreciative of and catering to the people's interest and need ,could be built Acknowledging the significant role of history in the advancement of people's conscience and knowledge, students after studying the detailed interplay of Socio- Economic-Political, Cultural and Religious forces in the construction and change of the society of India and World through the various phases of history from ancient time to modern time develop the deeper understanding of the historical forces that contributed in shaping the present socio-economic- cultural-political and religious structure of India as well as the world Present course of history at graduation and Post graduation level imparts in the students the comprehensive understanding of and a deep sense of belongingness to the rich cultural, philosophical and intellectual history of the India through the teaching of the varied aspects and dimensions of the Indian history and culturefrom primitive age to the colonial era It successfully instills in the students the true nature, meaning ,objective ,value ,goal and importance of the history through teaching them in detail about the philosophy of history and advancement of history writing in the various phases of history Acknowledging the paramount importance of the study of regional history infostering the comprehensive understanding of the past it rendersstudents with the detailed knowledge of the varied aspects and dimensions of the society and culture of the Uttarakhand developed in the course of history from ancient period to the British era. With humility it could be submitted that this Programme inculcates in the students the required analytical and critical understanding of the past which helped them to grow as responsible and sensible citizen
Programme Specific Outcomes (History)	• Helps not only in fostering comprehensive understanding of the evolution and development of the religion, customs, institutions, administration and other aspects of the Indian society but also in gaining critical insight of the then existing socio-religious and economic conditions of the people. • Inculcates the understanding of lively relations between the past and present and the impact of past in shaping the present. • Develops ***practical skills*** helpful in the study and understanding of historical events. They: (a) Draw historical maps, charts, diagrams etc (b) Prepare historical models, tools etc. • Develop ***interests*** in the study of history through conducting activities relating to history. They- (a) Collect ancient arts, old coins and other historical materials; (b) Participate in historical drama and historical occasions; (c) Visit places of historical interests, archaeological sites, museums andarchives; (d) Read historical documents, maps, charts etc (e) Play active roles in activities of the historical organizations andassociations; (f) Write articles on historical topics • The study of history helps to impart moral education and • History installs the feeling of patriotism in the hearts of the pupils etc. After the completion of the Graduation & Post Graduation Students are benefited by acquiring broad knowledge of the history of Uttarakhand ,India and world from the ancient period to modern period It helps them in preparing themselves for the competitive exams such as I.A.S., P.C.S., NET/SET, Railways, Banking etc but also in pursuing research .

B.A.(History)

Semester System

B.A.- I & II SEM

HISTORY PAPER I : ANCIENT INDIA –FROM EARLIEST TIMES TO 1200 A.D

COURSE	COURSE OUTCOMES
Ancient India –From Earliest Times to 1200A.D	On the completion of the course, students will be ableto - • Perceive various sources of the study of AncientIndia. • Know about the development and the achievements of human in the StoneAge. • Understand the glory of Indian history in the age of Harappancivilization. • Understand the factors responsible for the growth and decline of the the Magadha & MauryanEmpire and the specific aspects and traits of the Maurya Empire. • Know about the MauryanEmpire. • Perceive socio-economic, religious situation under theMaurya. • Detailed knowledge about the Guptaperiod. • Understand emergence of feudal system in Indiansociety. • Understand the History of Satvahanas, Shungas, Kushans, andHunas. • Know about the Sangam age, the Cholas, Pallavas and Chalukyas. • Know about the Invention of Arabs, Ghaznavids and Gorids and theirimpact.

B.A.-I &II SEM

PAPER II-WORLD HISTORY (1648-1815)

COURSE	COURSE OUTCOMES
World History (1648 AD - 1815 AD.)	On the completion of the course student will be able to • Know the factors responsible for the decline of feudalism and the rise of modern era • Understand the emergence and impact of the renaissance and reformation movement in shaping the modern progressive society of Europe . • Understand the establishment and extension of the nation states -Spain, France, England etc and the forces of industrialization and scientific development and its effect. • To know the economic, social and political dimensions of the Europe of 17th century, the English revolutions and its impact on European politics, major political issues and intellectual currents, parliamentary monarchy, absolutism,renaissance and its impact on modern science and European society, mercantilism. • Grasp agricultural and scientific background to industrial revolution, American revolution of 1776 & Learn about the causes and aftermath of the Frenchrevolution.

Semester III Paper I: History, of India from c. AD 1200- 1526 (75 Marks) MM 75

COURSE	COURSE OUTCOMES
History, of India from c. AD 1200- 1526	After completion of the course student will have • Comprehensive knowledge of the sources of sultanate period ofIndia. • Understanding of territorial expansion of Muslim rulers and rule during the SultanatePeriod. • Broad understanding of the administrative setup of Mugal Sultanate from central to locallevel.

	• Knowledge of the system of trade & commerce during the period of Sultanate. • Understanding of the nature of village community & the relationship between the different sections of society. • Understanding of the aspects of fiscals & monetary system under theSultanate. • Insight into the attitude of Emperors towards religion under the regime ofSultanate.

Semester III Paper II (a) World History 1815-1914 AD

COURSE	COURSE OUTCOMES
World History 1815-1914 AD	On the completion of course, students will be able to- 1. Understand the rise of Metternich and how Metternich dominated the European polities. 1. Learn about the causes and aftermaths of French Revolution 1830,1848 2. Understand the factors responsible for the end of monarchy inFrance. 3. Describe how feudalism came to end InEurope. 5. Describe the historical process which leads to rise of nationalism inEurope. 6. Understand how industrial revolution encouraged to colonial expansion. 6.Describe the first world war and itsimpact and the shift in ideology

Semester IV Paper I – Mughal Period (1526-1707) MM 75

COURSE	COURSE OUTCOMES
Mughal Period(1526-1707	On completion of the course students will be able to 1. Understand the political situation of India on the eve of Babar'sinvasion. 2. Grasp territorial expansion of Mughalempire. 3. Understand the emergence & consolidation of the empire of SherShah. 4. Grasp the Mughal concept of divine theory of kingship &state. 5. Understand the administrative set up ofMughals. 6. Comprehend the basic features of Mansabdari & change in it during 17thcentury. 7. Know the system of trade & commerce during the period ofMughals. 8. Understand the nature of villagecommunity and how it remain ineffected by the changes in the rulers at central level.

Semester IV Paper II (a) World History (1914-1945) MM 75

COURSE	COURSE OUTCOMES
World History (1914-1945)	Students will be able to- • Understand the importance of world peace right after the world war Ist. • Evaluate the Russian revolution and the first experiment of the communist government. • Understand the fascism and the rise of dictatorship in Europe. • Explain the aftermaths of the World War II on the world politics.

Semester V Paper I- Modern India (1707-1857) MM 75

COURSE	COURSE OUTCOMES
Modern India (1707-1857)	Students will be able to- • Understand modern Indian history. • Identify the importance and the legacy of Freedom Movement. • Distinguish the detail account of British raj as well as its overall impacts on the Indian society. • Evaluate the renaissance and social reform movement in India. • Understand early people's resistance to British rule.

Semester V Paper II (a)- Indian Society and Culture (upto 1200 AD) MM 75

COURSE	COURSE OUTCOMES
Indian Society and Culture (upto 1200 AD)	Students will be able to • .Know the rich intellectual history and traditional knowledge system of ancient India • Understand diverse culture, traditions ,customs ,belief ,cultural and religious values and practices existed in the journey of History of India from indus valley to the medieval period • Comprehend rich cultural legacy and heritage of India and the intellectual and cultural achievement of the Indian society • Understand the rich tradition of protest against orthodoxy and social -cultural reforms in the ancient and medieval period • Have extensive understanding of the cultural and philosophical values and essence of Indian civilization

Semester VI Paper I- Modern India (1858-1950) MM 75

COURSE	COURSE OUTCOMES
Modern India (1858-1950)	Students will be able to • Understand the historical forces that lead to the expansion and consolidation of British power in India, the nature and policies of colonial state and their devastating impact on the Indigenous system of India. • Understand the extensive destruction of the economic and social system of the India under the colonial ruler which resulted in the popular uprising against the subjugation. • Know in detail about the emergence and development of the nationalist consciousness and the development of national movement under the leadership of congress, its various movements ,aim ,objectives, organization and strategies adopted during the struggle against british opperessive regime • Assess the emergence of various socio-religious reform movements and their impact as well as limitation in creating awareness among the people about the need of democratization of Indian society as a integral part of the freedom from british. • To study the growth ,role and impact of the anti caste movement, revolutionary movement, communist movement, peasent and labour class movement, tribal movement and women movement in providing and defining the meaning and value of independence to the Indian masses. • Understand the historical factors responsible for the emergence and consolidation of communalism in india which finally culminated in the partition of india, creation of republic democratic india through the making & implementation of the constitution, securing unity of India through the merger of the princely states.

Semester VI Paper II (a) Indian Society and Culture 1200 AD-1950 MM 75

COURSE	COURSE OUTCOMES

M.A(History) Semester System

M.A. (Semester I) : Paper I- World History (1453 A.D. -1648 A.D.)

COURSE	COURSE OUTCOMES
World History (1453 A.D. - 1648 A.D.)	On the completion of the course students will be able • toknow the socio-economic-political and cultural factors causing decline of feudalism and risen of modern Era and leading to Renaissance and Reformation movement in the Europe . • To understand the rise and growth of nation-states-Spain, France, England etc. • To know the factors responsible for Industrial and Intellectual movements and its impact on the socio-economic and cultural system of the Europe.

M.A. (Semester I) : Paper II- Historiography : Sources and Trends

COURSE	COURSE OUTCOMES
Historiography : Sources and Trends	On the completion of the course students will be able - • To understand the value and significance of studying history • To know the definition, meaning, nature and scope of history • To know the contribution of historians through ages • To have critical and analytical view on the different approaches and explanation of historian about the past of a society • To understand the methodology of history writing

M.A. (Semester I) : Paper III- Political and Economic History of Delhi Sultanate (1206 A.D. -1526 A.D)

COURSE	COURSE OUTCOMES
Political and Economic History of Delhi Sultanate (1206 A.D. - 1526 A.D.)	On the completion of the course, students will be able • To know the different sources of medieval Indian history • To understand the factors responsible for the Rise and downfall of slave dynasty, Tughlag dynasty, Lodhi dynasty and also the various policies pursued during their regime • To have critical understanding of theattributes and nature of the Islamic State, about the traits of the administrative system established at Central and provincial level and also about the Political and Economic system prevalent at then

M.A. (Semester I) : Paper IV- Political & Cultural History of Uttarakhand (Up to Chand Period)

COURSE	COURSE OUTCOMES
Political & Cultural History of Uttarakhand (Up to Chand Period)	On the completion of the course, students will be able to Understand the sources of the history of Uttarakhand • Know the prehistoric, unafraid and historic lands. • Understand the ancient dynsities of Kunindas, Paurava Varmans, Katyuris and Post Katuri's of Uttarakhand. • Know the cultural, social and religious system, values and tradition of Uttarakhand

M.A. (Semester II) : Paper I - World History (1648 A.D. -1776 A.D.)

COURSE	COURSE OUTCOMES
World History (1648 A.D. - 1776 A.D.)	On the completion of the course, students will be able • To know the17th century European economic, social and political system and its attributes • To understand the glorious revolution andits impact on the European politics • To know about the growth of liberalism in Europe ,major political issues and ideologies and the intellectual currents, • To understand about the factors responsible for the growth of parliamentary system and absolute monarchism • To know about the renaissance and its impact on the growth of modern science and European society • To know the mercantilism and its impact on the expansion of the empire, agricultural and scientific background to industrial revolution • To understand the cause and impact of American revolution of 1776on the world and its significance in the growth of new world order.

M.A. (Semester II) Paper II- Historiography : Issues and Approaches

COURSE	COURSE OUTCOMES
Historiography : Issues and Approaches	After the completion of the course student will be able to have comprehensive understanding of the philosophy of the historical writing as this course is introduced to impart knowledge about the different historiographical trends or schools in Indian history. It covers the major developments in the interpretation of Indian history from the ancient times to the modern. The different ideologies which influenced the historians in their understanding of India's past will be stressed here. The manner in which historians' understanding of the nature and scope of history as a subject changed and expanded, and the way in which they interpreted and reconstructed the past will form the essence of thiscourse.

M.A. (Semester II) Paper III- Political and Economic History of Mughals (1526 A.D. -1707 A.D.)

COURSE	COURSE OUTCOMES
Political and Economic History of Mughals (1526 A.D. -1707 A.D.)	On completion of the course students will able to • Understand the political situation of India on the eve of Babar'sinvasion. • Grasp territorial expansion of Mughalempire • Understand the emergence & consolidation of SherShah • Grasp the Mughal concept of divine theory of kingship &state • Understand the administrative set up ofMughals. • Comprehend the basic features of Mansabdari system& change in it during 17thcentury. • Know the system of trade & commerce during the period ofMughals • Understand the nature of villagecommunity • Understand the varied aspects of fiscal & monetary system ofMughals.

M.A. (Semester II) Paper IV- Political & Cultural History of Uttarakhand (From Gorkhas to 1950 A.D.)

COURSE	COURSE OUTCOMES
Political & Cultural History of Uttarakhand (From Gorkhas to 1950 A.D.)	On the completion of the course, students will be able to: Understand the history of Gorkhas in Uttarakhand. Know the British rule in Uttarakhand. Understand the Freedom struggle and local movements like Kuli Begar movements. Know the trends in religious history of Uttarakhand. Know the art, architecture society, economic and educational history of Uttarakhand under British rule.

M.A. (Semester III) Paper I- History Of Modern World (1776 A.D. -1870 A.D.)

COURSE	COURSE OUTCOMES
History Of Modern World (1776 A.D. -1870 A.D.)	This course will provide the students with an Understanding of main issues and developments in Europe during this period. Highlight major political events and discuss its impact on European Society. Study Socio-Economic currents. On the completion of course, students will able to... 1. Learn about the causes and after mats of the Frenchrevolution 2. Understand the factors responsible for the end of monarchy inFrance 3. Understand the rise of Nepolean and how Meternic dominated the Europeanpolitics.

M.A. (Semester III) Paper II- Indian National Movement : (1857A.D.-1919 AM.)

COURSE	COURSE OUTCOMES

Indian National Movement : (1857A.D.-1919 AM.)	Students will be able to.... • Understand modern Indianhistory • Identify the importance and the legacy of FreedomMovement. • Distinguish the detail account of British raj as well as its overall impacts on the Indiansociety • Understand some of the early resistance to Britishrule. • Understand early political awakening in Indian freedomstruggle. • Identify the social institutions of late nineteenthcentury. • Understand various phases of the nationalmovement • Understand the difference between moderates, extremists andrevolutionaries. • Comprehend the socio-religious scenario and the socialreformation. • Grasp the details of freedom movement under the Mahatma Gandhi'sleadership. • Understand the evolutionary processes of constitutionaldevelopments.

M.A. (Semester III) Paper III- Society and Cultural History of India (1206 A.D. -1707 A.D.)

COURSE	COURSE OUTCOMES
Society and Cultural History of India (1206 A.D. -1707 A.D.)	After the completion of the course student will be able to • To know the multiple sources of sultanate & Mughal period of India • To understand the development of Islamic art , architectures and literature, amalgamation or synthesis of Hindu-Muslim society and culture of India under the Islamic rulers • To gain the critical understanding of socio-economic-political and cultural system of the medieval age • To understand the impact of the Islamic rule and its policies on the status of education and women of india during Mugal period • Growth and development of Bhakti and Sufhi movement and the various other religious sects and their philosophy and ideals during medieval period

M.A. (Semester III) Paper IV- Political and Economic History of Modern Indian (1707 A.D. - 1857 A.D.)

1.

COURSE	COURSE OUTCOMES
Political and Economic History of Modern Indian (1707 A.D. - 1857 A.D.)	This is an advanced course on Indian history during the first hundred years of British colonial rule. Firstly, it addresses the debate on 18th century India. Next it deals with the expansion and consolidation of British power in India. The ideologies of the British Raj will be analysed. The colonial construction of India, the administrative, economic, and social policies of the British will be delineated. Further, the impact of the colonial policies and programmes on Indian polity, economy and society will be focused. The nature and forms of Indian resistance to colonialism will be studied. On the whole, the course will highlight the nature and working of British colonialism in India, and its impact on India from 1707 to1857.

M.A. (Semester IV) Paper I- History Of Modern World (1870 A.D. -1945 A.D.)

COURSE	COURSE OUTCOMES
History Of Modern World (1870 A.D. -1945 A.D.)	Students will able to 1 Understand the importance of world peace right after the world war Ist 2 Evalnate the Russian revolution and the first experiment of the communist government 3 Understand the fascism and the rise of dictatorship in Europe 4 Explain the after mats of the World War II on the world politics

M.A. (Semester IV) Paper II- Indian National movement (A.D. 1919-1950 A.D.)

COURSE	COURSE OUTCOMES

Indian National movement (A.D.1919-1950A.D.)	This is an advanced level course on Indian National Movement. It emphasizes on the ideological dimensions, Long-Term Strategy, mass participation and spontaneous nature of the Indian National Movement. The social composition and regional variations in various movements like Swadeshi and Boycott, Non-Cooperation, Civil Disobedience, Quit India, etc., would be highlighted during the course of discussion. The different historiographical trends like Imperialist, Nationalist, Marxist, Cambridge and Subaltern would be assigned priority in the teaching of this course. Besides, the whole movement would be approached as a reaction to colonialism, that is, in the historical context of challenge and response. This study would familiarize the students with the writings of eminent scholars of modern Indian history. The objective is to enable the students to comprehend the nature, dynamics, ramifications and significance of the Indian National Movement. The valuable ideals like truth, non-violence, democracy, secularism, socialism and constructive work upheld by the national struggle for independence and which are very relevant even today could be emphasised while handling this course and inculcated in the minds of the students. Further the aim is to approach the subject at a higher level of understanding by emphasising on the issues and problems, myths and realities, and history from below paradigm. The successes and partial failure of the movement would also be treated objectively.

M.A. (Semester IV) Paper III- Society and Cultural History of India (A.D. 1708-1950 A.D.)

COURSE	COURSE OUTCOMES
History of India (A.D. 1708-1950 A.D.)	After the completion of the course Students will be able • To understand the cultural policy of British for colonizing India through an aggressive intellectual campaign aimed at demonizing and denigrating the religion ,philosophy and culture of India and asserting the superiority of western religious -philosophical system over natives consequently in opposition to the colonization of mind India witnessed emergence of strong socio-religious reform movement aimed at democratization of the society based on the ancient Indian religious and cultural values and ideals. • To understand the growth of western education and its effects on the different societies of India ,efforts for the emancipation of Indian women and Dalits and tribal population of india • To know the changes brought forward in the society and culture of India by the british regime and its policies, growth of the nationalist consciousness among the Indian .

(Dr. Gaurav Bhatt)
In Charge
Deptt. of History

हिन्दी विभाग

राजकीय स्नातकोत्तर महाविद्यालय, रामनगर (नैनीताल)

B.A. V Sem.

प्रथम प्रश्न पत्र– प्रयोजनमूलक हिन्दी

उपादेयता –छात्र हिन्दी की व्यावहारिक उपयोगिता समझ सकेंगे। पत्रों से अभिप्राय, पत्रों के प्रकारों को समझ सकेंगे। व्यावहारिक जीवन में प्रयोजनमूलक हिन्दी के महत्व को समझ सकेंगे। साहित्य को समझने के लिए मीडिया को उपयोग करना समझ सकेंगे। साहित्य के प्रचार व प्रसार में प्रिंट मीडिया व इलैक्ट्रॉनिक मीडिया का उपयोग करना सीख सकेंगे। संचार भाषा के स्वरूप तथा वर्तमान संचार व्यवस्था से अवगत हो सकेंगे।

द्वितीय प्रश्न पत्र–लोक साहित्य

उपादेयता –छात्र संस्कृति, सभ्यता, लोक साहित्य से अवगत होंगे। कुमाऊँनी लोक साहित्य से परिचित हो सकेंगे। कुमाऊँनी लोकगीत, कुमाऊँनी लोकगाथा, कुमाऊँनी लोक कथा, लोकनाट्य, लोकनृत्य से परिचित हो सकेंगे लोक संस्कृति, लोक परंपरा, लोक पर्व, लोक मेले, त्यौहार, व्रत, उत्सव, खान–पान, रीति–रिवाज, रहन–सहन, रूढ़िवादिताएं इत्यादि से परिचित हो सकेंगे।

B.A. VI Sem.

प्रथम प्रश्न पत्र–हिन्दी पत्रकारिता

उपादेयता– छात्र जीवन में पत्रकारिता का महत्व समझ सकेंगे तथा जीवन में पत्रकारिता का प्रयोगा करना सीख सकेंगे। समाचार के संकलन एवं लेखन के प्रमुख आयामों को समझ सकेंगे। संपादन कला के महत्वपूर्ण तथ्यों से परिचित हो सकेंगे। तथा प्रजातांत्रिक व्यवस्था में चतुर्थ स्तम्भ के रूप में पत्रकारिता का दायित्व समझ सकेंगे।

द्वितीय प्रश्न पत्र–उत्तराखण्ड का हिन्दी साहित्य

उपादेयता– उत्तराखण्ड के शिष्ट साहित्य का उदभव एवं विकास का अध्ययन कर सकेंगे। उत्तराखण्ड के कथाकार एवं उत्तराखण्ड के कहानीकारों से परिचित हो सकेंगे। छात्र उत्तराखण्ड के हिन्दी साहित्य, कविताकारों से परिचित हो सकेंगे।

M.A.I Sem.

द्वितीय प्रश्न पत्र– सगुण काव्य एवं रीतिकालीन काव्य

उपादेयता– छात्रों में साहित्य को समझने, उसका आस्वादन करने तथा मूल्यांकन करने की दृष्टि विकसित होगी।कवियों के व्यक्तित्व एवं कृतित्व का परिचय कराना तथा साहित्य के लिए उनके योगदान पर प्रकाश डालना।तत्कालीन प्रवृत्तियों एवं परिस्थितियों से अवगत कराना।

M.A. II Sem.

पंचम् प्रश्न पत्र– आधुनिक हिन्दी काव्य छायावाद तक

उपादेयता– छात्रआधुनिक हिन्दी कविता के विकास की सामान्य जानकारी प्राप्त कर सकेंगे।आधुनिक हिन्दी कवताि के विभिन्न चरण एवं उनके नामों से परिचित हो सकेंगे। पाठ्यान्तर्गत कवियों के व्यक्तित्व एवं कृतित्व का परिचय समझसकेंगे।

M.A. III Sem.

नवम् प्रशन पत्र– आधुनिक हिन्दी काव्य–छायावादोन्तर

उपादेयता– छायावादोन्तर हिन्दी काव्य के विकास की सामान्य जानकारी प्राप्त कर सकेंगे।कवियों के व्यक्तित्व एवं कृतित्व की जानकारी प्राप्त कर सकेंगे। साहित्य अकादमी द्वारा सम्मानित कवियों के सन्दर्भ में परिचित हो सकेंगे।

M.A. IV Sem.

पंचदश प्रश्न पत्र– प्रेमचन्द

उपादेयता– प्रेमचन्द के कृतित्व, व्यक्तित्व, विचार, अभिव्यक्ति अनुभूति से परिचित हो सकेंगे। आदर्शोमुखी यथार्थवाद से परिचित हो सकेंगे। समाज के मध्य वर्ग को नजदीक से समझ सकेंगे।

M.A.I Sem.

प्रथम प्रश्न पत्र– आदिकालीन एवं निर्गुण काव्य

उपादेयता– छात्र हिन्दी साहित्य का इतिहास, हिन्दी साहित्य के इतिहास का काल–कम, हिन्दी साहित्येतिहास लेखन की परम्परा समझ सकेंगे। आदिकालीन एवं निर्गुण काव्य कवियों के व्यक्तित्व एवं कृतित्व की जानकारी प्राप्त कर सकेंगे।

M.A. II Sem.

अष्टम् प्रश्न पत्र– हिन्दी कथा एवं नाटक साहित्य

उपादेयता– छात्र हिन्दी उपन्यास एवं नाटक के उद्भव एवं विकास का अध्ययन कर सकेंगे। पाठ्यान्तर्गत हिन्दी कथाकारों एवं हिन्दी नाटककारों के व्यक्तित्व,कृतित्व एवं विचारधारा का परिचय प्राप्त कर सकेंगे।

M.A. III Sem.

एकादश प्रश्न पत्र– निबन्ध एवं स्मारक साहित्य

उपादेयता– निबन्ध के उद्भव एवं विकास की जानकारी प्राप्त कर सकेंगें। स्मारक साहित्य की विभिन्न विधाओं से अवगत हो सकेंगे। निबन्धकारों से परिचित हो सकेंगे। संस्मरण एवं रेखाचित्र के विषय में जानकारी प्राप्त कर सकेंगे।

M.A. IV Sem

चतुर्थ प्रश्न पत्र– कुमाऊँनी लोक साहित्य

उपादेयता– कुमाऊँनी लोक साहित्य से परिचित हो सकेंगे। कुमाऊँनी सभ्यता, संस्कृति को समझ सकेंगे। कुमाऊँनी लोकगीतकार, लोककथाकार, लोकगाथाकार का अध्ययन कर सकेंगे। लोक साहित्य से परिचित हो सकेंगे।

छात्र के व्यावहारिक जीवन में हिन्दी का महत्व

- छात्रों में, जनसंचार एवं इलैक्ट्रॉनिक मीडिया के माध्यम से हिन्दी का महत्व अवगत कराना। तथा सूचना प्रौद्योगिकी के नए क्षेत्र में हिन्दी की विकास यात्राा की जानकारी देकर उनमें अभिरूचि का निर्माण करना।
- छात्रों की साहित्य सम्बन्धी अभिरूचि तथा आस्वादन क्षमता में अभिवृद्धि करना।
- लोक साहित्य, प्रयोजनमूलक हिन्दी, जनसंचार माध्यम और हिन्दी, पत्रकारिता आदि विषयों में अध्ययन के लिए छात्र को प्रोत्साहित करना।
- हिन्दी साहित्य की प्राचीन एवं आधुनिक गद्य व पद्य विधाओं का तात्विक परिचय देना।
- साहित्यिक कृतियों का विवेचन, विश्लेषण, आस्वादन तथा समीक्षा करने की दृष्टि देना।
- कवियों द्वारा साहित्य के लिये दिये उनके योगदान पर प्रकाश डालना।

विभागाध्यक्ष
स्नातकोत्तर महाविद्यालय
रामनगर (नैनीताल)

विभागप्रभारी
(हिन्दी)
रा० स्ना० महा०
रामनगर (नैनीताल)
उत्तराखण्ड

एसोसियेट प्रोफे०
रा० स्ना० महाविद्यालय
रामनगर (नैनीताल)