

Maharaja Surajmal Brij University, Bharatpur

Two Year Post Graduation Programme Curriculum



Skill Enhancement Courses (SEC)

M.A. / M.Com. / M.Sc. (All Streams)

Syllabus (Semester I & II)

(2025-2026 and onwards)

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प्रभारी अकादमिक प्रथम

Introduction: In today's rapidly changing world, education is no longer limited to textbooks, lectures, and theoretical knowledge. Traditional learning alone cannot fully prepare students for the practical challenges of modern careers. This is why skill-based courses have become an essential part of contemporary education. These courses focus on developing specific abilities, competencies, and practical knowledge that students can directly apply in real-life situations. Whether it is communication, digital literacy, entrepreneurship, problem-solving, or technical expertise, skill-based learning equips students with tools they need to succeed in both personal and professional spaces.

Skill-based courses emphasize learning by doing. Instead of memorizing information, students engage in hands-on activities, projects, internships, industry training, and real-world tasks. This active learning approach helps students understand concepts more deeply and develop confidence in their abilities. For example, a skill-based course in computer applications teaches students to design spreadsheets, create presentations, and process data—skills that are immediately useful in higher education and the workplace. Similarly, vocational skills such as cooking, carpentry, graphic design, coding, or electrical maintenance prepare students for specific trades and professional roles.

One of the major benefits of skill-based courses is that they enhance employability. Employers today seek candidates who not only have academic qualifications but also possess practical skills, critical thinking abilities, creativity, and adaptability. Skill-based education bridges the gap between academic learning and industry requirements. Students who complete such courses are better prepared for job interviews, professional responsibilities, and workplace expectations. They can also showcase their skills through portfolios, projects, and certifications, giving them a competitive edge in the job market.

Another important aspect is that skill-based learning encourages self-confidence and self-reliance. When students learn to solve real problems, manage projects, or use modern tools, they become more confident in their abilities. This confidence motivates them to explore new opportunities, take initiatives, and work independently. Skill-based courses also promote creativity, teamwork, and communication—qualities that are essential for success in any field.

Furthermore, these courses help students discover their interests and passions. Not every student excels in theoretical subjects, and many prefer practical or creative learning. Skill-based education gives them a chance to explore different fields and identify what they truly enjoy. This leads to better career choices and overall personal development.

In addition, skill-based courses contribute to the growth of society and the economy. A skilled population is more productive, innovative, and capable of meeting industry demands. By encouraging students to develop diverse skills, education systems can reduce unemployment, promote entrepreneurship, and support national development. Aims to provide real-world experience through workshops, projects, or other activities to reinforce learning.

In conclusion, skill-based courses are a vital part of modern education. They prepare students for the real world by combining knowledge with practical application. Through hands-on learning, these courses boost employability, confidence, creativity, and career readiness. As the world continues to evolve, the importance of skill-based education will only grow, making it essential for students to embrace these opportunities and build a strong foundation for their future.

A skill enhancement course is a program designed to provide value-based and skill-based knowledge to improve employability. These courses often blend theoretical learning with hands-on training, such as lab work, fieldwork, or practical application, to equip students with both technical and professional abilities like communication, leadership, and digital literacy. Often integrated into the academic curriculum, sometimes as mandatory, credit-based courses, to ensure all students benefit. They are integral to modern education, especially under new frameworks like the National Education Policy (NEP) 2020, and aim to help students adapt to the job market and become job-ready. This type of curriculum typically includes both theoretical concepts and practical, hands-on components.

List of Skill Enhancement Courses (SEC)

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Note: In addition to these courses, any students can also opt for the online course of 4-credit government-approved programs like (MOOCS, NPTEL, SWAYAM and others). These students should submit their certificate to the college/university after completion of the course. Credit for the online course will be added to your Academic Bank of Credits.


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Scheme of Examination for Skill Enhancement Courses (SEC) as Per UGC Framework:

MSBU have offered two types of schemes of the examination detail below

Sr. No.	Scheme Type	Theory Credit	Practical Credit	Total Credit
1	Scheme-I	4	0	4
2	Scheme-II	0	4	4

Scheme Type-I: Scheme of the Examination for subjects having **Four** credit theory only:

1 Credit = 25 marks for examination/evaluation (Paper Marks =100)

Each course in Semester Grade Point Average (SGPA) has two components- **Continuous Assessment (CA)** (20% weightage) and **End of Semester Examination (EoSE)** (80% weightage).

Each Paper of EoSE shall carry 80% of the total marks of the course/subject. The EoSE will be of 3 hours duration.

Part-A: Part A of the paper shall have eight short answer type and multiple-choice questions of equal marks. This first question shall be based on knowledge, understanding and applications of the topics/texts covered in the syllabus.

Part B: Part B of the paper shall consist of 2 questions with an internal choice of each unit. The two questions will be solved in each of the units with internal choice. **Second to fifth** questions shall be based on applications of the topics/texts covered in the syllabus (60% weightage) and shall involve solving Problems (40% weightage) if applicable.

Final Theory Exam Question Paper Pattern (4 Credit)

Type	Questions	Types of Questions	Marks
Part-A	Qus. 1	Eight compulsory short answer type or multiple-choice questions from all units and students shall answer all questions.	2*8=16
Part-B	Qus. 2	Two questions will be given from UNIT-I, make subsections if required. Student shall answer only one question.	16 or 8*2=16
	Que. 3	Two questions will be given from UNIT-II, make subsections if required. Student shall answer only one question.	16 or 8*2=16
	Que. 4	Two questions will be given from UNIT-III, make subsections if required. Student shall answer only one question.	16 or 8*2=16
	Que. 5	Two questions will be given from UNIT-IV, make subsections if required. Student shall answer only one question.	16 or 8*2=16
		Total	80

Scheme Type-II: Scheme of the Examination for Practical subjects having **Four** credit only:

1 Credit = 25 marks for examination/evaluation (Paper Marks =100)

Each course in Semester Grade Point Average (SGPA) has two components- **Continuous Assessment (CA) (20 % weightage)** and **End of Semester Examination (EoSE) (80% weightage)**.

Each Paper of EoSE shall carry 80% of the total marks of the course/subject. The EoSE will be of 3 hours duration.

Part-A: Part A of the paper shall consist of 4 questions with an internal choice of each. The four questions will be set with one from each of the units with internal choice. First to fourth questions shall be based on applications of the topics/texts covered in the syllabus (60% weightage) and shall involve solving Problems (40% weightage) if applicable.

Part-B: Practical Record

Part-C: Viva-Voce

Final Practical Exam Question Paper Pattern (4 Credit)

Type	Questions	Types of Questions	Marks
Part-A	Qus. 1	Two practicals from Unit-I and the student shall answer one practical.	15
	Qus. 2	Two practicals from Unit-II and the student shall answer one practical.	15
	Que. 3	Two practicals from Unit-III and the student shall answer one practical.	15
	Que. 4	Two practicals from Unit-IV and the student shall answer one practical.	15
Part-B		Practical Record	10
Part-C		Viva-Voce for Practical	10
		Total	80


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Basic of Artificial Intelligence & Machine Learning

Credits: 04

Total Hours: 60(Theory)

Introduction: The course “Basic of Artificial Intelligence & Machine Learning” is designed to postgraduate students with a comprehensive foundation in two crucial domains: Artificial Intelligence (AI) and Machine Learning. This skill based/ interdisciplinary course aims to equip students with fundamental concepts and practical skills that are increasingly valuable in today's technology-driven world.

Course Objectives: The main objectives of this course are as follows:

- To familiarize students with the fundamental concepts, theories, and applications of artificial intelligence.
- Students will gain insight into the various subfields of AI, such as machine learning, natural language processing, computer vision, and robotics.
- To introduce students to the basics of Machine learning, enabling them to write code, solve problems, and understand programming constructs.
- This objective emphasizes building a programming foundation as a prerequisite for implementing AI algorithms.

Course Learning Outcomes: Upon completing the course, students can expect to achieve the following outcomes:

- Students will have a clear understanding of the fundamental concepts and terminology of Artificial Intelligence, enabling them to discuss and comprehend AI-related topics.
- Students will be proficient in writing Python programs, understanding syntax, and applying programming constructs.
- This skill set will serve as a solid foundation for further programming endeavors.

Detailed Course Content

Unit-I

Hours: 15

Introduction To Artificial Intelligence: Definition, How Does AI Work?, Advantages and Disadvantages of Artificial Intelligence, Types of Artificial Intelligence, Weak AI, Strong AI, Historical overview and key milestones, Differentiating AI from human intelligence, Future of Artificial Intelligence, Characteristic of Intelligent Agents, Typical Intelligent Agents –Problem Solving Approach to Typical AI problems. Problem solving by Searching: Uninformed and informed strategies and implementation, Path planning, Constraint Satisfaction Problems (CSP).

Unit-II

Hours: 15

Knowledge Representation: Introduction, Knowledge-Based Agent, Types of Knowledge. Logical Agents– Propositional and first order Predicate logic–inference– Knowledge representation and Automated Planning– Uncertain Knowledge and Reasoning, Quantifying uncertainty– probabilistic reasoning.

Unit-III

Hours: 15

Applications of AI: AI in healthcare: Diagnosis, treatment, and medical imaging, AI in finance: Fraud detection, algorithmic trading, and risk assessment, AI in transportation: Autonomous vehicles and traffic optimization, AI in customer service and chatbots, AI in education: Personalized learning and intelligent tutoring systems

Machine Learning: Machine learning basics - Learning from examples - forms of learning (supervised, unsupervised, reinforcement learning) -simple models (linear & logistic regression) - Deep Learning AI applications:

Unit-IV

Hours: 15

Ethical and Social Implications of AI: Bias and fairness in AI systems, Privacy and data protection concerns, Impact of AI on employment and the workforce, AI and social inequality **Other Important Issues:** Ethical guidelines and responsible AI practices, AI and Innovation, Emerging trends and future directions in AI, AI and creativity: Generative models and artistic applications.

Suggested Book Lists:

1. Elaine Rich, Kevin Knight, and Shivashankar B. Nair, **Artificial Intelligence**, McGraw Hill Education.
2. Nilakshi Jain, **Artificial Intelligence: Making A System Intelligent**, First Edition, Wiley.
3. Reema Thareja, **Artificial Intelligence: Beyond Classical AI**, Pearson Education, 2023.
4. Saptarsi Goswami, Amit Kumar Das and Amlan Chakrabarti, “AI for Everyone – A Beginner’s Handbook for Artificial Intelligence”, Pearson, 2024.
5. Stuart Russell and Peter Norvig, **Artificial Intelligence: A Modern Approach** (4th Edition), Pearson Education, 2023.
6. Tom Taulli, **Prompt Engineering for Generative AI: ChatGPT, LLMs, and Beyond**, Apress, Springer Nature.

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Signature

Customer Relationship Management Process

Credits: 04

Total Hours: 60(Theory)

Introduction: Customer Relationship Management (CRM) course introduces the strategy and technology for managing a company's interactions with current and potential customers. They teach how to use data analytics to improve business relationships, enhance customer satisfaction, and drive sales growth. The objective is to shift from a short-term, transaction-based model to a long-term, relationship-focused approach for sustained profitability. Key topics often include customer retention, lifetime value, and leveraging CRM software.

Course Objective: The main objectives of this course are as follows:

- The course focuses on understanding the core concepts of CRM, its evolution, and the critical differences between transactional and relationship marketing approaches.
- Analyzing customer value and behavior based on their needs, preferences, and lifetime value (CLV) to the business.
- Explore methods to measure customer satisfaction and build loyalty programs to encourage repeat business and reduce customer churn.
- Understand how CRM streamlines and automates marketing, sales, and customer service operations to improve efficiency and reduce costs.
- Facilitate seamless information sharing and coordination among different departments (sales, marketing, support) to provide a unified and consistent customer experience.

Course Learning Outcomes: On successful completion of this course, the students will be able:

- To be aware of the nuances of customer relationship.
- To analyze the CRM link with the other aspects of marketing
- To impart the basic knowledge of the Role of CRM in increasing the sales of the company.
- To make the students aware of the different CRM models in service industry.
- To make the students aware and analyze the different issues in CRM.

Detailed Course Contents

Unit-I

Hours: 15

Evolution of Customer Relationship: CRM- Definition, Emergence of CRM Practice, Factors responsible for CRM growth, CRM process, framework of CRM, Benefits of CRM, Types of CRM, Scope of CRM, Customer Profitability, Features Trends in CRM, CRM and Cost-Benefit Analysis, CRM and Relationship Marketing.

Unit-II

Hours: 15

CRM Concepts: Customer Value, Customer Expectation, Customer Satisfaction, Customer Centricity, Customer Acquisition, Customer Retention, Customer Loyalty, Customer Lifetime Value. Customer Experience Management, Customer Profitability, Enterprise Marketing Management, Customer Satisfaction Measurements, Web based Customer Support.

Unit-III

Hours: 15

Planning for CRM: Steps in Planning-Building Customer Centricity, Setting CRM Objectives, Defining Data Requirements, Planning Desired Outputs, Relevant issues while planning the Outputs, Elements of CRM plan, CRM Strategy: The Strategy Development Process, Customer Strategy Grid.

Unit-IV

Hours: 15

CRM and Marketing Strategy: CRM Marketing Initiatives, Sales Force Automation, Campaign Management, Call Centres. Practice of CRM: CRM in Consumer Markets, CRM in Services Sector, CRM in Mass Markets, CRM in Manufacturing Sector.

CRM Planning and Implementation: Issues and Problems in implementing CRM, Information Technology tools in CRM, Challenges of CRM Implementation. CRM Implementation Roadmap, Road Map (RM) Performance: Measuring CRM performance, CRM Metrics.

Suggested Book Lists:

1. Alok Kumar Rai, "Customer Relationship Management: Concepts and Cases", 2008, PHI.
2. Dilip Soman & Sara N-Marandi, "Managing Customer Value" 1st edition, 2014, Cambridge.
3. Francis Buttle, Stan Maklan, Customer Relationship Management: Concepts and Technologies, 3rd edition, Routledge Publishers, 2015.
4. Jagdish N.Sheth, Atul Parvatiyar & G.Shainesh, "Customer Relationship Management", Emerging Concepts, Tools and Application", 2010, TMH.
5. Ken Burnett, the Handbook of Key "Customer Relationship Management", 2010, Pearson Education.
6. Kumar, V., Reinartz, Werner Customer Relationship Management Concept, Strategy and Tools, 1st edition, Springer Texts, 2014
7. Mukesh Chaturvedi, Abinav Chaturvedi, "Customer Relationship Management- An Indian Perspective", 2010 Excel Books, 2nd edition.

Computers for Chemists

Credits: 04

Total Hours: 60(Theory)

Introduction: The integration of computers into chemistry education and practice, particularly in skill-based programs, centers on computational chemistry and cheminformatics. This approach develops practical skills in data analysis, modeling, and automation, moving beyond traditional lab work to enhance accuracy, speed, and problem-solving capabilities. Skill-based programs in “Computers for Chemists” aim to equip students with a diverse toolkit that is highly sought after in academia and industry.

Course Objective: The main objectives of a “Computers for Chemists” course are to equip students with fundamental computer skills for chemistry-related tasks, including using software for data analysis, graph plotting, and document preparation, as well as understanding basic programming for solving chemical problems and handling scientific data. Students will learn to apply these skills to analyze experimental data, solve chemical equations, and create documents that incorporate chemical structures and equations.

Course Learning Outcomes: The learning outcomes for a “Computer for Chemists” course typically involve developing fundamental computer literacy and applying computational methods to solve chemical problems.

- Students able to mastering software for data analysis and presentation (like Word, Excel).
- Able to writing programs to solve chemical equations, and understanding computational techniques for simulating chemical reactions and structures.
- Students should be able to use software like Microsoft Office for tasks such as writing reports, creating presentations,
- Able to understand analyzing data, as well as gain programming skills (often in languages like C) to apply to specific chemical problems.

Detailed Course Contents

Unit-I

Hours: 15

Introduction to Computers and Computing: Basic structure and functioning of computers with a PC as an illustrative example. Memory, I/O devices. Secondary storage, Computer languages. Operating systems with DOS as an example Introduction to UNIX and WINDOWS, principles of programming Algorithms and flow-charts.

Unit-II

Hours: 15

Computer Programming in FORTRAN/C/BASIC: (The language features are listed here with reference to FORTRAN. The instructor may choose another language such as BASIC or C and the features may be replaced appropriately). Elements of the computer language. Constants and variables. Operations and symbols. Expressions. Arithmetic assignment statement. Input and output. Format statement. Termination statements. Branching statements such as IF or GO To statement. LOGICAL variables. Double precision variables. Subscripted variables and DIMENSION DO statement. FUNCTION and SUBROUTINE, COMMON a DATA statements (students learn the programming logic and the language features by 'hands on' experience on a personal computer from the very beginning of this topic).

Unit-III

Hours: 15

Programming in Chemistry: Developing of small computer codes (FORTRAN / C/ BASIC involving simple formulae in Chemistry, such as Vander Waals equation. Chemical kinetics (determination of Rate constants), Radioactive decay (Half Life and Average Life). Determination of Normality. Molarity and Molality of solutions. Evaluation of Electronegativity of atom and Lattice energy from experimental data. Determination of molecular weight and percentage of elements in organic compounds using data from experimental methods. Representation of molecules in terms of elementary structural features such as bond lengths, bond angles, dihedral angles, etc.

Unit-IV

Hours: 15

Use of Computer Programmes: Operation of PC. Data Processing. Running of standard Programs and Packages such as MS WORD, MS EXCEL special emphasis on calculations and chart formations. X-Y plot. Simpson's Numerical Integration method. Programmes with data preferably from physical chemistry Laboratory. Introduction of working of any one of the packages such as LOTUS/EXCEL/ FOXPRO/ MOPAC and Word Processing software such as WORDSTAR/ MS WORD.

Suggested Book Lists:

1. Computers For Chemists, P. Bansal, (Pragati Prakashan).
2. Computers For Chemists, Sachin Gihar, (Neel Kamal Prakashan).
3. Computers in Chemistry-K.V. Raman (Tata McGraw Hill).
4. Computer Programming in FORTRAN IV-V Rajaraman (Prentice Hall).
5. Fundamentals of Computers-V. Rajaraman (Prentice Hall).


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Ethno-Medicinal Plants and Their Uses

Credits: 04

Total Hours: 60(Theory)

Introduction: Ethno-medicinal plants are traditional remedies from indigenous cultures, used for centuries to treat ailments like infections, digestive issues, skin problems, and respiratory illnesses, leveraging knowledge passed down generations, with parts like leaves, roots, and flowers used in various preparations (pastes, decoctions) to boost immunity or cure specific diseases, forming a vital, though often unrecorded, part of global healthcare, especially in rural areas.

Course Objective: The primary objectives of course typically include:

- Identification and classification of medicinal plant species, including their botanical names, families, and habitats.
- Documentation methods for collecting indigenous knowledge from local healers and community members using ethical guidelines.
- Traditional preparation methods such as decoctions, infusions, pastes, and powders, as well as the specific plant parts used (leaves, roots, bark, fruits, etc.).
- Phytochemistry and pharmacology, examining the bioactive compounds (e.g., alkaloids, flavonoids, tannins) responsible for the therapeutic effects.
- The link between traditional and modern medicine, including how many contemporary pharmaceuticals (like quinine and artemisinin) were derived from plant-based traditional remedies.

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

- Understand document and preserve traditional knowledge of medicinal plants using appropriate ethnobotanical research methods.
- Identify and classify a wide range of local or regional ethnomedicinal plants and understand their cultural significance.
- Analyze and evaluate the efficacy and safety of traditional herbal remedies based on existing scientific literature and pharmacological evidence.
- Understand the potential for new drug discovery from traditional plant sources by identifying promising species for further scientific investigation.
- Promote the conservation and sustainable utilization of medicinal plant biodiversity and the associated indigenous knowledge systems.
- Communicate effectively with traditional healers, local communities, and scientific professionals, respecting cultural protocols and ethical guidelines.

Detailed Course Contents

Unit-I

Hours: 15

Introduction to Ethno-Medicine: Ethno-Botany Definition, Concepts and Scope, Branches (ethno-medicine, ethno-pharmacology, ethno-toxicology), Relationship between plants and traditional societies, Importance of indigenous knowledge in healthcare. **Traditional Knowledge:** Traditional Healing Systems, Ayurveda: Ashwagandha (*Withania somnifera*), Shatavari (*Asparagus racemosus*), Unani: Tulsi (*Ocimum sanctum*), Pudina (*Mentha piperita*), **Siddha:** *Aegle marmelos*, *Phyllanthus amarus*, Folk medicine examples: Snakebite remedies using *Rauvolfia serpentina*, Fever treatment using *Nyctanthes arbor-tristis*. Loss of biodiversity,

Role of Tribal Communities: Knowledge from Bhil, Gond, Sahariya, Meena communities, Plant-culture relationship (sacred groves, rituals, ethnomedical beliefs). **Methods of Ethnobotanical Documentation:** Interview methods with tribal healers, PRA tools, participant observation, Herbarium techniques: collection, pressing, labeling.

Unit-II

Hours: 15

Major Ethno-Medicinal Plants – Identification & Uses: Identification of Medicinal Plants, Botanical characters, local names, family, habit and habitat, Use of floras and identification keys. **Ethno-Medicinal Plant Categories with Examples:** Anti-microbial Plants, *Azadirachta indica* (Neem) – antibacterial, skin diseases, *Curcuma longa* (Turmeric) – antiseptic, wound healing, Anti-inflammatory Plants, *Boswellia serrata* (Salai Guggul) – joint pain, *Vitex negundo* (Nirgundi) – anti-swelling, Anti-diabetic Plants, *Momordica charantia* (Bitter gourd), *Gymnema sylvestre* (Gudmar). **Anti-malarial Plants:** *Artemisia annua* – anti-malarial, *Swertia chirayita* – fever and malaria. Wound Healing Plants: *Aloe vera* – burns, cuts, *Plantago major* – wound dressing. **Safety, Dosage & Toxicity:** Safe limits, contraindications, Toxic plants (e.g., *Nerium oleander*, *Datura stramonium*).

Unit-III

Hours: 15

Ethno-Medicinal Flora of Rajasthan: Vegetation Zones of Rajasthan: Arid, semi-arid, dry deciduous, Aravalli ranges, wetlands of Bharatpur, Influence of climate on medicinal plant diversity. **Tribal Traditional Healing in Rajasthan:** Meena: remedies for fever, cold, Bhil: snakebite and fracture treatment, Sahariya: forest-based medicine. **Conservation Concerns:** Overharvesting of Guggal, Desertification and habitat degradation, Community-level conservation practices.


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Unit-IV

Hours: 15

Conservation, Commercialization & Future Prospects: Conservation Strategies, In-situ conservation: sacred groves, protected forests, Ex-situ conservation: herbal gardens, botanical gardens, seed banks. **Sustainable Harvesting & Cultivation Techniques:** Good Agricultural Practices (GAP), Cultivation of important medicinal plants: (i) Aloe vera (ii) Ashwagandha (iii) Safed Musli (*Chlorophytum borivilianum*), (iv) Senna and (v) Giloy.

Value Addition & Herbal Product Preparation: Preparation of powders, extracts, juices, oils, gels, Examples: Aloe gel, Ashwagandha capsules, Neem oil, Senna tablets. **Commercialization & Entrepreneurship:** Demand in Ayurveda, nutraceutical, cosmetic industries, Startup opportunities: Herbal tea, Essential oils, Organic extracts, Supply chain & marketing channels, Case studies of successful entrepreneurs in herbal products.

Suggested Book Lists:

1. Dr. Prakash Paranjpe's, Indian Medicinal Plants: Forgotten Healers (A Guide to Ayurvedic Herbal Medicine) | Exotic India Art.
2. Dr. Virendra K Sangode et. al, An International Textbook on Medicinal Plants of India An Ethnobotanical Research.
3. Hrudayanath Thatoi and Srustidhar Rout, Medicinal Plants: Ethnomedicine and Biotechnological Potential, Biotech.
4. P.C. Trivedi, Ethnomedicinal Uses of Plants, Pointer Publishers, 2015.
5. Swapan Kumar Koley, Ethno-Medicine for Traditional Health Care, B.R. Publishing Corporation, 2016.



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Healthy and Sustainable Food Choice

Credits: 04

Total Hours: 60(Theory)

Introduction: “Healthy and Sustainable Food Choice” skill-based course is designed to equip individuals with the knowledge and practical skills to make food choices that benefit both personal health and environmental sustainability. The curriculum typically covers topics like the health and environmental impact of food, how to assess nutritional and sustainable performances of various foods, and how to plan and prepare healthy, planet-friendly meals. “Healthy and Sustainable Food Choices” is an interdisciplinary course that explores the complex connections between human health, nutrition, and the environmental, economic, and social impacts of food systems.

Course Objectives: The primary objectives of such a course typically include:

- To develop an in-depth understanding of factors influencing individual and societal food choices, including biological, psychological, cultural, economic, and political elements.
- To equip students with the analytical and practical skills needed to assess current food systems and develop innovative, sustainable solutions.
- To understand the role of nutrition policies and governance frameworks in promoting healthy and sustainable diets at local, national, and global levels.
- To train a new generation of professionals (e.g., public health nutritionists, food scientists, policymakers) capable of creating nutrition awareness and promoting healthy lifestyles in diverse contexts.

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

- Evaluate the nutritional quality and sustainability of various diets and food production methods.
- Analyze the environmental degradation and energy demands associated with unsustainable food systems.
- Design and implement interventions that promote healthy eating behaviors and sustainable food practices within communities and institutions.
- Communicate effectively about complex food system issues to diverse audiences, from individuals to policymakers.

Detailed Course Content

Unit-I

Hours: 15

Nutritional Science and Health: This unit defines nutritional and health impact.

Principles of Nutrition: Macronutrients, micronutrients, and their functions in the body. **Nutritional**

Assessment: Evaluating the nutritional performance and sustainability of diets.

Food for Health and Disorders: Addressing food requirements for different life stages and common health issues like obesity, diabetes, and digestive disorders. **Healthy Food Habits:** Promoting balanced diets and understanding the impact of processed foods.

Unit-II

Hours: 15

Sustainability and Environment: This unit defines sustainability and environment impact.

Environmental Science: Exploring the impact of food on ecosystems, including resource use, pollution, and climate change. **Sustainable Food Systems:** Concepts like food security, food systems, and the trade-offs between health and environmental impacts. **Sustainable Food Choices:** Strategies for making sustainable choices, such as eating locally, reducing waste, and choosing plant-based or sustainably sourced proteins.

Unit-III

Hours: 15

Food Safety and Quality: This unit discuss food safety and quality.

Food Hygiene: Personal hygiene, sanitation in food service, and factors affecting food safety. **Food Spoilage and Preservation:** Understanding the processes of food spoilage and methods for preservation. **Food Adulteration:** Identifying adulterants and their health effects.

Unit-IV

Hours: 15

Food Systems and Policy: This unit discuss food system and policy.

Food Systems: The social, economic, and political factors that shape food production and consumption. **Trade and Food Security:** The relationship between international trade, food availability, and food security. **Population and Environment:** The impact of population growth on food resources and the environment.

Suggested Reading:

1. Bacon, L., & Bacon, L. (2010). Health at every size: The surprising truth about your weight. Ben Bella Books.
2. Gallegos, D., & Wahlqvist, M. L. (Eds.). (2020). Food and Nutrition: Sustainable food and health systems. Taylor & Francis.
3. Lawrence, M., & Friel, S. (2019). Food And Nutrition: Sustainable Food and Health Systems, Routledge.
4. Thakur, M. (2024). Sustainable Food Systems (Volume II). World Sustainability Series, Springer, Cham.

Histology And Histopathology

Credits: 04

Total Hours: 60(Theory)

Introduction: A skill-based course in Histology and Histopathology provides foundational knowledge and hands-on training in the microscopic study of normal and diseased tissues, preparing individuals for diagnostic laboratory roles. Histology is the study of the microscopic structure of tissues, while **histopathology** is the histological study of **diseased** tissues for diagnostic purposes. Histology provides the foundation by teaching normal tissue structure, and histopathology applies this knowledge to identify abnormalities like cancerous cells or inflammation in samples from biopsies or surgeries. This field is crucial for diagnosing diseases, determining their severity, and evaluating the effectiveness of treatments.

Course Objectives: The main objective of this course discussed below:

- Provide fundamental principles of histology and histopathology.
- Train students in tissue processing, sectioning, staining and microscopic analysis.
- Develop understanding of normal and pathological structures of organ systems.
- Equip students with basic diagnostic skills in cellular pathology.
- Build laboratory skills for fixation, histochemical techniques and slide interpretation.

Course Learning Outcomes: After complete this course students will be able to:

- Perform tissue processing, embedding, sectioning and staining.
- Identify normal histological features of major tissues and organs.
- Recognize pathological changes such as necrosis, fatty degeneration, inflammation etc.
- Execute histochemical tests and in-situ detection techniques.
- Analyze pathological slides with professional accuracy.

Detailed Course Contents

Unit-I

Hours: 15

Tools & Techniques in Histology: This unit discuss describes tool and technique of Histology.

- **Definition and scope** of histology and histopathology. **Tools in histology:** Principles, design and functioning of microtomes, automated microtomes, ultramicrotome, problems and trouble shooting.
- **Techniques in histology:** Sample preparation, obtaining tissue samples, handling reagents, fixatives, processing of fixed samples, dehydration, embedding, block making and slide preparation. **Tissue preparation:** fixation, dehydration, embedding, block making, sectioning.
- **Micrometry:** Microscopic measurements of histological samples using micrometres and planimeters.

- **Staining principles and demonstration techniques:** Stains, Reactive groups, mordants and mordanting. PAS staining, Alcian blue technique, Alkaline phosphatase detection, Feulgen reaction, Sudan Black B staining and Methyl green–pronging staining

Unit-II

Hours: 15

Cellular Pathology & Basic Tissues

- **Cellular Pathology:** Necrosis, apoptosis, nuclear fragmentation, fatty degeneration etc.
- **Fundamentals of histology:** Epithelial, connective, muscular, nervous and other specialized tissues.
- **Skin**
- Histology and histopathology of blood, spleen and thymus.

Unit-III

Hours: 15

Endocrine & Reproductive Systems

- Histology and histopathology: Thyroid, parathyroid, pituitary, adrenal glands
- Reproductive system: Male & female

Unit-IV

Hours: 15

Digestive System

- Histology and histopathology: Esophagus, stomach, intestine, colon, rectum
- Liver & pancreas (normal & pathological features)

Suggested Book Lists:

1. Kiernan, J. A. (2008). *Histological and Histochemical Methods: Theory and Practice* (4th ed.). Scion Publishing Ltd., Oxfordshire.
2. Ross, M. H., Reith, E. J., & Romrell, L. J. (1995). *Histology: A Textbook and Atlas* (2nd ed.). Williams & Wilkins, Baltimore.
3. Copenhaver, W. M. (1964). *Bailey's Textbook of Histology* (15th ed.). The Williams & Wilkins Company, Baltimore.
4. Bloom, W., & Fawcett, D. W. (1975). *A Textbook of Histology*. W. B. Saunders Company, Philadelphia.
5. Kierszenbaum, A. L. (2002). *Histology and Cell Biology: An Introduction to Pathology*. Mosby Inc., St. Louis, USA.
6. Orchard, G., & Nation, B. (2012). *Histopathology*. Oxford University Press.

Media Laws and Ethics

Credits: 04

Total Hours: 60(Theory)

Introduction: Good reporting is not the only skill necessary to make a news organization reputable. To gain the trust of viewers, listeners or readers serious consideration must also be given to ethical situations that may arise during the course of reporting. In addition to that, the prevalent media laws must be well understood by every reporter editor and must be followed at all times.

Course Objectives: The main objective of this course discussed below:

- To understand the duties and the rights of a reporter or editor.
- To understand the tricky dilemmas involved in news reporting.
- To understand various national and international laws that governs the Press.

Course Learning Outcomes: Learning outcomes for a Media Laws and Ethics course include:

- Understanding the legal framework governing media, analyzing ethical dilemmas, and applying legal and ethical principles to professional practice.
- Students should be able to identify legally contentious issues, understand laws like defamation, copyright, and privacy, and recognize when to seek legal advice.
- To develop strategies for responsible media practices and assess the effectiveness of media regulations and ethical guidelines.

Detailed Course Content

Unit-I

Hours: 15

Introduction to Indian Judicial System and Terminology, Brief History of Press Laws in India: Before and After Independence. Freedom of Expression and Speech under the Constitution of India. Laws Governing the Reporting of Court Proceedings and Contempt of Court. Laws Governing the Proceedings of Parliament and State Assemblies and Privileges.

Unit-II

Hours: 15

Official Secrets Act and Right to Information, Laws Concerning Airwaves. Laws against Defamation and Libel, Press Council of India. Fundamental Ethical Standards (Accuracy, Objectivity, Fairness and Balance, Fakery, Truth, Integrity of Sources), Conflict of Interest, Codes of Ethics.

Unit-III

Hours: 15

Theoretical Approaches to Ethics (The Golden Mean, the Categorical Imperative, the Principle of Utility, the Veil of Ignorance, Judeo-Christian Ethics). Media Ethics: Ethical Decision Making (Ethics and Media Practitioners, Relationship Between Ethics Political and Social Issues, Economic Issues in Relation to Ethics)

Unit-IV

Hours: 15

Moral Reasoning Processes for Ethical Decisions. Ethical Situations and Dilemmas (Business v/s Profession, Freebies and Junkets, Anonymous Attribution, Checkbook Journalism, Right of Privacy v/s Public Interest), Sensationalism, Decency and Good Taste (Direct Quotations, Correction of Errors, Fiction and Fact, Impact of Current Trends on Ethics (Economic Demands on Media, Globalization and War on Terror).

Suggested Book Lists:

1. Ethics, Copyright & the Bottom Line by Eastman Kodak.
2. Journalistic Ethics by P.K. Bandhopadhyay and Kuldeep S. Arora.
3. Journalism Ethics by Phillip Seib & Kathy Fitzpatrick.
4. Mass Communication Law and Ethics by Roy L. More.
5. Media Ethics: Cases and Moral Reasoning by Clifford G. Christians and Others. Published by Pearson Education.
6. Press Laws by D.D. Basu (Prentice Hall)
7. Press Laws by Subir Ghosh.

Methods of Teaching Mathematics

Credits: 04

Total Hours: 60(Theory)

Introduction: Methods of teaching mathematics are diverse and range from traditional approaches to modern, interactive strategies that focus on problem-solving, conceptual understanding, and student engagement. Common methods include the lecture method, demonstrations, and teacher-led explanations, while more student-centered approaches involve problem-solving, cooperative learning, and using visual aids, manipulatives, and technology to make abstract concepts concrete and relevant to real life. Effective teaching combines these methods to cater to different learning styles and build a strong foundation for students.

Course Objectives: This course will enable the student teachers to:

- Understand history, development of mathematics and the contributions of Indian and other mathematicians towards mathematics.
- Understand aims, values and objectives of mathematics education.
- Identify the role of branches of mathematics & their implications on the society.
- Understand principles of curriculum construction development, its transactions and evaluation.
- Understand and practice various methods and techniques of teaching mathematics.
- Develop competency in teaching strategies, content and in the preparation teaching learning.
- Utilize laboratory, library and mathematics club as inputs in the teaching and learning of mathematics.

Course Learning Outcomes: After complete this course students will be able to:

- Students develop the ability to reason logically and provide convincing arguments to justify their conclusions.
- They learn to use arithmetic and algebra to solve problems, frame meaningful questions, and recognize appropriate problem-solving techniques.
- Students become adept at seeing relationships between numbers and identifying patterns.
- Methods encourage students to move beyond rote memorization to develop critical thinking and analytical skills.

Detailed Course Contents

Unit-I

Hours: 15

Introduction to Mathematics: Meaning and Nature of Mathematics, Scope of Mathematics, Contributions of the following Mathematicians to Mathematics: (a) Pythagoras (b) Rene Descartes (c) Aryabhata (d) Bhaskara Charya-II (e) Srinivasa Ramanujan (f) Shakunthala; Correlation of Mathematics with other subjects.

Values and Objectives of Teaching Mathematics: Aims and Objectives of teaching Mathematics, Instructional objectives with reference to Blooms taxonomy and its limitations, Teaching of different branches of Mathematics, Values of teaching Mathematics at secondary level.

Unit-II

Hours: 15

Approaches / Methods of teaching Mathematics: Problem solving approach: Inductive & Deductive Method, Analytic and Synthetic Methods, Heuristic Method, Laboratory Method, Project method, Techniques of Teaching Mathematics - Oral work, written work, supervised study, speed and Accuracy.

Planning for Teaching Mathematics: Skills of teaching Mathematics, Micro teaching: concept; Definition; Micro teaching cycle; Components of Micro teaching; Merits and limitations. Microteaching Skills: Instructional objectives; Introducing a lesson, Explaining a concept, Reinforcement, Structuring classroom questions; and Blackboard writing Planning of Instruction: Annual plan, Unit plan, and Lesson plan, Technology integrated lessons.

Unit-III

Hours: 15

Teaching Learning Material in Mathematics: Edgar Dale's Cone of Experience, Over Head Projector (OHP); LCD Projector; TV; Computer, Charts; Models; Specimens; Activity aids (Herbarium, Vivarium, Terrarium); Display boards, Improvisation of Teaching aids.

Mathematics Curriculum: Principles of curriculum construction, Approaches of curriculum - Logical, Psychological, Topical, Concentric, and Spiral, Constructivist approach, Project based learning (PBL).

Unit-IV

Hours: 15

Resources for Strengthening Mathematics Education: Textbook in Mathematics: Importance and Criteria of a good Mathematics text book, Concept Ladder process (CLP), Mathematics Library, Mathematics Laboratory, Mathematics Clubs, Mathematics Fairs / Exhibition; Mathematics Olympiad, Mathematics talent search examination.

Mathematics Teacher Professional and Evaluation in Mathematics: Qualities of a good Mathematics teacher, Professional competencies of a Mathematics Teacher, Action Research for improving Quality of Mathematics Teaching & Learning. Evaluation concept of Test, Examination, Measurement, Assessment and Evaluation, Evaluation - Meaning, Process, Types and Tools, Qualities of a good test and Types of Tests.

Suggested Book Lists:

1. Bloom, Benjamin S., Ed. (1958): Taxonomy of Educational Objectives, Handbook I Cognitive Domain, Harcourt Brace & World Inc., New York.
2. David. R. Davis, The Teaching of Mathematics, Newbook info, Surjeet Publications, New Delhi.
3. Dr. N. M. Rao, Mathematics projects and Mathematics Laboratory.
4. Dr. S. Packiam. Methods of teaching Mathematics by
5. Dr. A. K. Kulshrestha and Puneeth Kumar R. Lal Teaching of Mathematics (UGC Syllabus) by Book Depot, Meerut.
6. Dr. Anice James, Teaching of Mathematics by Neelkamal Publications.
7. Mangal S.K. (1993): Teaching of Mathematics, Arya Book Depot, New Delhi.
8. National curriculum framework for teacher education - 2000 - (Document published by NCERT).
9. Siddu K.S. (1990): Teaching of Mathematics, Sterling Publishers, New Delhi.

Numerical Techniques- Laboratory Work (Practical)

Credits: 04

Total Hours: 120(Practical)

Introduction: Numerical techniques labs are skill-based practical courses that teach computational methods for solving complex mathematical problems, many of which lack analytical solutions. These labs focus on developing both theoretical understanding and practical programming skills using software like MATLAB or Python. Numerical techniques are essential computational tools used across science, engineering, and finance to approximate, optimize, and simulate complex systems. The “skill-based” practical component (laboratory work) is designed to move beyond theory and build proficiency in applying these methods to real-world problems.

Course Objective: The purpose of practical is to provide hands-on experience in applying statistical concepts and techniques to real-world data, enabling individuals to describe data, make inferences about populations, identify relationships and patterns, predict future trends, and ultimately make informed decisions and support research across various fields. The course provides students to gain insight into scientific phenomena, model complex systems, and predict future behavior using experimental data. By fitting a parameterized function (the empirical law) to a set of observed data points, students learn to identify relationships between variables, smooth noisy data, perform calculations like differentiation and integration, and visualize trends. The practical in the Numerical Solution of Partial Differential Equations (PDEs) is to apply numerical methods to find approximate solutions to complex PDEs that lack analytical solutions.

Course Learning Outcomes: Upon successful completion of this course, students will be able to:

- Organize, manage, present data and analyze statistical data graphically using frequency distributions and cumulative frequency distributions.
- Construct mathematical equations to represent data, learn to apply numerical methods like least squares, understand the limits of analytical solutions.
- Able to gain experience in using software tools for data analysis, thereby connecting theoretical concepts to real-world problem-solving in science and engineering.
- Apply the numerical techniques to solve research problems of fluid dynamics, mathematical modeling.
- Apply computational methods to solve PDEs, enabling them to develop and validate numerical codes, model physical phenomena like heat and wave propagation, and interpret their results.
- Solve for eigenvalues and eigenvectors, compute the inverse of a matrix, apply these concepts to real-world problems.

Detailed Course Contents

Unit-I

Hours: 30

Statistical Method-Measures of central tendency, Measures of dispersion, Standard deviation of combination of two groups, Correlation, Lines of Regression, Standard error of estimate, Rank of Correlation.

Unit-II

Hours: 30

Empirical Laws and Curve Fitting- Graphical method, Laws reducible to the linear law, Principle of least square, Fitting of curves, Method of group averages, Method of moments.

Unit-III

Hours: 30

Numerical Solution of Partial Differential Equations- Classification of second order equations, Finite difference approximations to derivatives, Jacobi's Iteration formula, Gauss- Seidel Method, Solution of Laplace equation, Poisson's equations, Parabolic equations, Heat equations, Hyperbolic Equations, and wave equation.

Unit-IV

Hours: 30

Matrix inversion and eigenvalue problem-Gauss Jordan method, Gauss elimination method, Factorization method, Partition method, Iterative method, numerically largest eigenvalue and the corresponding eigenvector, Power method, Jacobi's method, Given's method, House-Holder's method.

Note: From units-I to IV to understand deep knowledge in a practical way, we use the following software (**Mathematica / Wolfram Language, MATLAB, Microsoft Excel, NumRe, Python (with NumPy/SciPy libraries), SPSS, SAS, Stata, Origin/OriginPro**).

Suggested Book Lists:

1. Atkinson K. E., An Introduction to Numerical Analysis (2nd Ed.), Wiley-India, 1989.
2. Buchaman J.I., Turner P. R., Numerical Methods and Analysis, McGraw-Hill,1992.
3. C. F. Gerald and P. O. Wheatley, Applied Numerical Analysis, Pearson Education, India,7th edition, 2008.
4. Gupta and Kapoor: Fundamentals of Mathematical Statistics.
5. Kapur and Sexena: Mathematical Statistics.
6. M.K. Jain, S.R.K. Eyenger and R.K. Jain, Numerical Methods for Mathematics and Applied Physicists, Wiley-Eastern Pub., N. Delhi, 2005.
7. Sastry S. S., Introductory Methods of Numerical Analysis, PHI,2019.
8. V. Rajaraman, Computer Oriented Numerical Methods, PHI, 1993.

Personality Development and Stress Management

Credits: 04

Total Hours: 60(Theory)

Introduction: This course combining personality development and stress management skills aims to provide a holistic framework for students with advanced knowledge of psychological theories and practical skills for personal and professional growth. The curriculum focuses on enhancing self-awareness, communication, emotional intelligence, and resilience, enabling individuals to navigate challenges and manage pressure effectively. The course typically blends theoretical understanding with practical application, using methods like group discussions, and self-assessments.

Course Objectives: The main objective of this course discussed below:

- Students identify their strengths, weaknesses, values, and behavioural patterns.
- Develop effective verbal and non-verbal communication, active listening, and interpersonal skills. Create inculcate skills for team building, decision-making, and motivating others.
- Cultivate a positive self-image and assertive attitude to approach social and professional situations with ease.
- Develop effective stress management strategies with practical tools like time management, mindfulness, and relaxation techniques to cope with stressors.
- Students lean individuals to understand and manage their own emotions and recognize those of others, leading to better conflict resolution and stronger relationships.

Course Learning Outcomes:: After complete this course students will be able to:

- Students able to identify their own strengths, weaknesses, emotions, values, and goals, fostering a deeper understanding of themselves.
- Students improves both verbal and non-verbal communication, as well as active listening.
- Learners acquire skills for building better relationships, working effectively in teams, resolving conflicts, and leading others with empathy and motivation.
- They develop critical thinking skills to approach challenges creatively and make well-informed.
- Learners gain knowledge about the causes, symptoms, and impact of stress on their mental and physical health. Able to recognize their specific stressors and the patterns.
- Students learn and apply various relaxation and mindfulness practices, such as deep breathing, meditation, and yoga, to calm the mind and body.
- The course teaches strategies for prioritizing tasks, setting goals, organizing time efficiently.
- Adopt healthy lifestyle practices, including proper diet, exercise, and sleep hygiene, to minimize long-term stress.

Detailed Course Content

Unit-I

Hours: 15

Introduction to Personality Development: This unit focuses on theories and self-awareness.

Definition and Determinants of Personality: Understanding the nature, dimensions, and factors influencing personality development. **Theories of Personality:** Overview of major theories like those by Freud, Erikson, and Carl Jung.

Self-Awareness and Assessment: Concepts of self-esteem, self-image, and self-monitoring, Tools like SWOT analysis, Johari Window, and personality tests (e.g., Big Five traits, MBTI). **Attitude**

and Motivation: Concept, significance, factors affecting attitude, and developing a positive mindset; understanding internal and external motives.

Unit-II

Hours: 15

Interpersonal and Communication Skills: This unit deals with effective interaction and leadership.

Effective Communication: Key aspects, barriers, public speaking, and body language.

Interpersonal Relationships: Developing positive relationships and understanding different behaviors (aggressive, submissive, assertive).

Leadership and Teamwork: Qualities of a successful leader, leadership styles, group dynamics, and team building. **Decision-Making and Conflict Resolution:** Skills for effective decision making and managing conflict at various levels.

Unit-III

Hours: 15

Fundamentals of Stress Management: This unit defines stress and its impact.

Nature and Causes of Stress: Definition of stress, eustress vs. distress, common stressors (workplace, personal, financial). **Perspectives on Stress:** Physiological (bodily reactions) and psychological (cognitive and behavioral) perspectives.

Consequences of Stress: Effects on physical and mental health, and work performance. **Stress-**

Prone Personalities: Understanding personality patterns like Type A, B, and C in relation to stress.

Unit-IV

Hours: 15

Strategies for Stress Reduction and Prevention: This unit focuses on practical coping mechanisms and lifestyle management.

Coping Mechanisms: Adaptive and maladaptive coping strategies. **Behavioural Techniques:** Time management, problem-solving skills, and nutrition/lifestyle issues.

Psychological and Spiritual Relaxation: Deep breathing and muscle relaxation techniques, Meditation, yoga, visualization, and music therapy. **Organizational Initiatives:** Employee assistance programs, coaching, mentoring, and creating a supportive workplace culture.

Suggested Book Lists:

1. D. P. Sabharwal, Personality Development Handbooks, Finger print Publishing 2021.
2. Eve, Adamson, Everything Stress Management, Everything, 2001.
3. Heller, Robert. Effective leadership. Essential Manager series. Dk Publishing, 2002
4. Hindle, Tim. Reducing Stress. Essential Manager series. Dk Publishing, 2003.
5. Hurlock, E.B (2006). Personality Development, 28th Reprint. New Delhi: Tata McGraw Hill.
6. Lucas, Stephen. Art of Public Speaking. New Delhi. Tata - Mc-Graw Hill. 2001
7. Pravesh Kumar. All about Self- Motivation. New Delhi. Goodwill Publishing House. 2005.
8. Rupali Joshi, Stress management and Breathing Exercise: A study on college going students
9. Smith, B. Body Language. Delhi: Rohan Book Company. 2004.

Public Relations and Corporate Communication

Credits: 04

Total Hours: 60(Theory)

Introduction: Though Public Relation (PR) and Corporate Communication are not new for the West, in India they have acquired immense importance as an area of specialization with the liberalization and globalization of economy. Public Relations (PR) and Corporate Communication are both strategic communication functions that build and maintain an organization's reputation, but PR focuses on managing external public image, media relations, and reputation through a more creative approach, while Corporate Communication manages both internal and external communication to ensure consistent messaging, uphold brand integrity, and build relationships with all stakeholders. Together, these functions work to cultivate a positive image and trust for the organization.

Course Objectives: To prepare the students to be able to work as PR persons and Corporate Communicators. The main objective of Public Relations (PR) and Corporate Communication is to manage an organization's reputation, build credibility, and foster positive relationships with stakeholders through strategic messaging. PR focuses on external audiences by building brand awareness and managing media relations, while Corporate Communication focuses on internal audiences through clear and consistent messaging and managing the organization's overall image. Together, these functions aim to shape a positive public perception and build trust both inside and outside the company.

Course Learning Outcomes:: Learning outcomes for Public Relations and Corporate Communication include the ability

- To develop and execute strategic communication plans, manage an organization's reputation, and write professional materials like press releases.
- Students also learn to critically analyze communication theories, handle crisis situations, and apply research and data to inform strategy.
- Write professional documents such as press releases, speeches, and annual reports.
- Analyze case studies to evaluate communication strategies and learn from past examples.
- Understand the flow of communication within an organization, including potential barriers.

Detailed Course Content

Unit-I

Hours: 15

Strategic PR/CC and Management: Defining Strategy and its Relevance in Public Relations and Corporate Communication, Campaign Planning, Management and Execution. Understanding the Brand and Brand Equity, Brand Identity and Reputation - A brief look at some of the legendary Brands (Private/Public) and comprehending brand personality (Case Studies).

Unit-II

Hours: 15

Evolution and History of Public Relations: Definition of PR, PR and Allied Disciplines (Publicity, Propaganda, Public Affairs and Lobbying etc.) Symmetrical and Asymmetrical Theories of PR. Law and Ethics of PR (Defamation, Copyright, Invasion of Privacy: PRSI Code of Ethics

Unit-III

Hours: 15

Interface of PR with Various Management Disciplines: Human Resource Development, Finance and Marketing etc. PR Tools: Interpersonal, Mass Media and Selective Media. Role of PR/CC in Crisis Communication and Disaster Management. PR in Industry: Public Sector, Private Sector, and Multinationals.

Unit-IV

Hours: 15

PR in State and Central Governments and Functioning of Various Media Units of the State and Union Governments. Building a Distinct Corporate Identity: Concepts, Variables and Process, Making of House Style (Logo, Lettering and Process). Corporate Social Responsibility and the new paradigm in Corporate Communication. Media Relations: Organizing Press Conferences, Facility Visits, Press Briefs. Proactive and Reactive Media Relations.

Suggested Book Lists:

1. Amanda Berry, PR Power: Inside Secrets from the World of Spin.
2. Alison Theaker, Handbook of Public Relations. Routledge. 2016.
3. Erica Weintraub Austin, Strategic Public Relations Management: Planning and Managing Effective Communication Programme.
4. Mike Beard, Running a Public Relations Department. Kogan Page Ltd. 2001.
5. Michael G. Parkinson, Law for Advertising, Broadcasting, Journalism and Public Relations.
6. Sandra Oliver, Public Relations: A Practical Guide to Corporate Communications Management.
7. Seva Singh Bajwa, Public Relations and Corporate Communication Building Trust and Managing Reputation (The Readers Paradise) 2025.

Principles & Methods of Archaeology

(पुरातत्व के सिद्धांत और विधियाँ)

Credits: 04

Total Hours: 60(Theory)

Introduction: Principles & Methods of Archaeology covers the scientific study of past human cultures through material remains, focusing on core skills like surveying (ground, aerial, geophysical), excavation (trenching, monitoring), dating (stratigraphy, radiocarbon), analysis (artifacts, ecofacts), and interpretation (GIS, historical research), all built on interdisciplinary science and context, to reconstruct human behavior and understand our shared heritage. It's about the *how* and *why* of past life, using evidence like tools, pottery, and structures.

Course Objective: The main objective of this course discussed below:

- Understand fundamental concepts: Grasp the core definitions, aims, scope, and principles of archaeology, including stratigraphy and site formation processes.
- Trace the history of the discipline how archaeological methods and theories have evolved over time, both globally and in specific regional contexts like India.
- Learn about different branches of specialized areas such as economic archaeology, marine archaeology, ethnoarchaeology, and salvage archaeology.
- Familiarity with dating techniques and learn the principles of both relative and absolute dating methods (e.g., radiocarbon, thermoluminescence, potassium-argon dating).
- Understand legal and ethical obligations to become aware of state and central government laws and regulations regarding the protection, preservation, and management of archaeological sites.

Course Learning Outcomes: Upon successful completion of this course, students will be able to:

- Focus on developing practical, analytical, and research skills essential for investigating and interpreting the human past.
- Ability to survey, map, and record archaeological sites using various methods like field walking, aerial photography, and geophysical surveys.
- Proficiency in the principles and methods of archaeological excavation (both horizontal and vertical), including the careful recovery of artifacts and understanding stratigraphic sequences.
- Skill in meticulous recording of all finds and evidence during fieldwork, including technical drawing, photography, and using digital tools like GIS (Geographic Information Systems).
- Knowledge of how to properly collect various samples from an excavation context, such as archaeobotanical and archaeozoological remains, for further scientific analysis.

Detailed Course Content

Unit-I

Hours: 15

Introduction to Archaeology (परिचय एवं विकास)

- पुरातत्व की परिभाषा एवं प्रकृति (Definition and nature of archaeology)
- इतिहास लेखन में पुरातत्व का महत्व (Importance of Archaeology in History Writing)
- पुरातत्व का उद्भव एवं विकास (भारत में) Origin and development of archaeology (in India)
- पुरातत्व की प्रमुख शाखाएँ (Prehistory, Protohistory, Historical Archaeology)

Unit-II

Hours: 15

Field Methods in Archaeology (क्षेत्रीय विधियाँ)

- पुरास्थल सर्वेक्षण (Reconnaissance, GPS Mapping, Surface Collection)
- उत्खनन के सिद्धांत व तकनीक (Vertical & Horizontal Excavation)
- स्तर और स्तरिकी अध्ययन (Strata & Stratigraphy Study)
- Tools, Instruments एवं Field Documentation (Diary, Drawing, Photography)

Unit-III

Hours: 15

Scientific Methods & Dating Techniques (वैज्ञानिक विधियाँ व डेटिंग)

- काल निर्धारण की सापेक्ष एवं परम विधियाँ (Relative and absolute methods of determining time.)
- रेडियोकार्बन, डेंड्रोक्रोनोलॉजी और थर्मोल्यूमिनेसेंस (Radiocarbon, Dendrochronology एवं Thermoluminescence)
- पुरातत्व में जैविक और भूवैज्ञानिक दृष्टिकोण (Biological & Geological Approaches in Archaeology)
- नमूना संग्रह, प्रयोगशाला विश्लेषण एवं रिपोर्ट तैयार करना (Sample Collection, Lab Analysis And Report Preparation)

Unit-IV

Hours: 15

Material Culture Analysis & Interpretation (सामग्री विश्लेषण व व्याख्या)

- पुरावशेषों का वर्गीकरण (Lithics, Pottery, Metal Objects, Ornaments)
- संरक्षण एवं संरक्षण विधियाँ (Conservation & Preservation)
- संग्रहालय प्रलेखन और प्रदर्शन तकनीक (Museum Documentation & Display Techniques)
- पुरातात्विक आंकड़ों की व्याख्या (परिकल्पना, पुनर्निर्माण, सांस्कृतिक अर्थ) (Interpretation of Archaeological Data (Hypothesis, Reconstruction, Cultural Meaning)

Suggested Book lists:

1. Greene, Archaeology: Introduction Pb: The History, Principles and Methods of Modern Archaeology, University of Pennsylvania Press, 1995.
2. John Evans, et al., Environmental Archaeology: Principles and Methods, Sutton Publishing Ltd.
3. K V. Raman, Principles and Methods of Archaeology
4. Matthew Johnson, Archaeological Theory: An Introduction, Wiley-Blackwell ,1999, 2019.

Stock Market Operations

Credits: 04

Total Hours: 60(Theory)

Introductions: Stock market investment skill-based courses are educational programs designed to equip individuals with the foundational knowledge and practical skills needed to make informed investing and trading decisions. These courses aim to demystify the market's complexities and provide a structured approach to wealth creation and financial growth. This course covering everything from basic terminology to market analysis techniques and risk management.

Course Objective: This course will cover the following modules:

- This course aim at giving a comprehensive understanding on the stock market operations in terms of its structure, trading, settlement procedures, processes and related components and the regulations, emerging challenges in the Indian Stock market.
- Functioning of financial markets and key participants (investors, brokers, exchanges).
- Understanding Initial Public Offerings (IPOs) and corporate actions (dividends, stock splits).
- Detailed breakdown of fundamental and technical analysis methodologies.
- Risk and money management principles and different trading styles (day trading, swing trading, long-term investing).
- Practical aspects like opening a Demat account and placing various types of orders.

Course Learning Outcomes: Upon completion of a beginner's course, you should be able to:

- Understand basic concepts of the stock market, including the roles of stock exchanges and regulatory bodies.
- Differentiate between various investment instruments like equities, bonds, mutual funds, and derivatives.
- Analyze company financials using fundamental analysis, which involves interpreting annual reports, balance sheets, and profit/loss statements.
- Employ technical analysis tools like charting, patterns (e.g., candlestick charts), and market indicators to predict stock price movements.
- Formulate investment strategies and build a diversified portfolio based on your risk tolerance and financial goals.
- Manage risk effectively using techniques such as setting stop-losses, proper asset allocation, and emotional control.

Detailed Course Content

Unit-I

Hours: 15

Introduction to Securities Market: Stock Market - Primary market and Secondary market, Pre-requisite to invest in stock Market- Bank Account, Demat Account and Trading account. **An Overview of Indian Securities Market:** Meaning, Functions, Intermediaries, Role of Primary Market – Methods of floatation of capital – Problems of New Issues Market – IPO's – Investor protection in primary market – Recent trends in primary market – SEBI measures for primary market. Modes of investment - Mutual fund & Direct equity.

Unit-II

Hours: 15

Stock Exchanges and its Functions: Meaning, Nature, Functions of Secondary Market – Organisation and Regulatory framework for stock exchanges in India – SEBI: functions and measures for secondary market – Overview of major stock exchanges in India - Listing of Securities: Meaning – Merits and Demerits – Listing requirements, procedure, fee – Listing of rights issue, bonus issue, further issue – Listing conditions of BSE and NSE – Delisting.

Mutual Fund Investment: Structure and working of mutual funds, Types of funds based on structure, objective and investment style, Ways of investing in mutual fund, NFO, NAV, Direct and regular mutual funds, Lump sum and SIP investment, Dividend options, Benefits of SIP, Redemption, SWP, Risk-o-meter, Fund fact sheet and its utility.

Unit-III

Hours: 15

Trading and Settlement: Different trading systems – BSE - BOLT System – Different types of settlements - Pay-in and Pay-out – Bad Delivery – Short delivery – Auction – NSE – NEAT system options – Market types, Order types and books – De-mat settlement – Physical settlement – Institutional segment – Funds settlement – Valuation debit – Valuation price – Bad.

Risk and Surveillance System in Stock Exchanges: short delivery Risk management system in BSE & NSE – Margins – Exposure limits, Surveillance system in BSE & NSE – Circuit breakers

Unit-IV

Hours: 15

Stock Market Indices: Meaning, Purpose, and Construction in developing index – Methods (Weighted Aggregate Value method, Weighted Average of Price Relatives method, Free-Float method) – Stock market indices in India – BSE Sensex - Sc Scrip selection criteria – Construction – Stock market indices in foreign countries (Overview).

Commodity and Currency Markets: Commodity exchanges: evolution and history – role in globalizing economy – governing regulations – price –risk management – commodity exposure – hedge accounting – currency futures – managing exchange rate – carbon markets – weather derivatives – ETFs – Purpose, Importance, types, construction

Suggested Book Lists:

1. Donald E. Fisher and Ronald J. Jordan: Securities Analysis and Portfolio Management, Prentice Hall, New Delhi.
2. Desai, Vasantha: The Indian Financial System, Himalaya Publishing House.
3. Gupta L.C.: Stock Exchange Trading in India, Society for Capital Market Research and Development, Delhi.
4. Khan M.Y: Indian Financial System, Tata Mc Graw Hill.
5. Machiraju.R.H: Indian Financial System, Vikas Publishing House.
6. Prasanna Chandra, "Investment Analysis and Portfolio management", Tata McGraw Hill, 3rd Edition, 2008
7. Punithavathy Pandian, "Security Analysis and Portfolio Management", Vikas Publishing House Pvt. Ltd.
8. Ravi Puliani and Mahesh Puliani, Manual of SEBI, Bharat Publication.
9. Sanjeev Agarwal, A Guide to Indian Capital Market, Bharat Publishers.
10. V. A. Avadhani, Investment and Securities Market in India, Himalaya Publishing House.



Organic Farming

Credits: 04

Total Hours: 60(Theory)

Introduction: Organic farming is a practical approach to agriculture focusing on natural processes (composting, crop rotation, biological pest control) to build healthy soil and ecosystems, avoiding synthetic inputs to produce sustainable, eco-friendly food, and developing skilled individuals for this growing sector through hands-on training in areas like biofertilizers, farm management, and organic marketing. It's a holistic system valuing environmental health, biodiversity, and farmer entrepreneurship, moving beyond simple chemical avoidance to embrace ecological balance

Course Objectives: The main objective of this course discussed below:

- To introduce the principles and practices of organic agriculture.
- To develop skills in soil health management, organic inputs, pest control, and certification.
- To train students for commercial organic farming and entrepreneurship development.
- To introduce the concept of organic ecosystem and learn about biological magnification & its significance in present day scenario.

Course Learning Outcomes: After complete this course students will be able to:

- Understand foundations, scope, and need of organic farming.
- Students will understand various principles, need and prospect of organic farming including the importance of sustainability, biodiversity and ecological balance.
- Students will gain hands on experience through field work, farm visits or practical exercises to apply their knowledge in a real-world setting.
- Learners will explore the significance of soil health in organic farming and various methods to enhance soil fertility through composting and crop rotation.
- Students will learn about marketing organic products, understanding consumer demand and the economic aspect of Organic farming.
- Gain skills in establishing and managing a commercial organic farming enterprise.
- Develop competency in pest, disease, and weed control using organic methods.

Detailed Course Content

Unit-I

Hours: 15

Introduction to Organic Farming: Concept, definition and history of organic farming, Differences between organic and conventional farming, Importance of organic farming in sustainable agriculture, National & global status of organic agriculture, Principles of organic farming (Health, Ecology, Fairness, Care), Organic agriculture policies in India (NPOP, PKVY, MOVCNDR etc.)

Unit-II

Hours: 15

Soil Health and Organic Nutrient Management: Soil fertility: physical, chemical, biological properties, Organic manures: FYM, compost, vermicompost, green manuring, Biofertilizers: Rhizobium, Azotobacter, PSB, Azospirillum, Trichoderma, Soil testing and nutrient budgeting, Composting methods: aerobic, anaerobic, NADEP, vermicomposting, Water management in organic systems.

Unit-III

Hours: 15

Organic Crop Management & Protection: Organic seeds and planting materials, Crop rotations, intercropping, mulching, Organic pest and disease management, Biopesticides (Neem, Bt, Beauveria, Metarhizium), Biological control methods, Weed management strategies in organic farming, Organic horticulture: vegetables, fruits, spices

Unit-IV

Hours: 15

Certification, Marketing & Commercial Organic Farming: Organic certification systems, Third-party certification, Participatory Guarantee System (PGS-India), Standards and regulations: NPOP, IFOAM, USDA Organic, Record keeping and documentation, Branding, labeling, and market linkages, Value addition & processing of organic products, Export potential and supply chain, Entrepreneurship in commercial organic farming, Business models, Cost-benefit analysis, Case studies of successful organic farms.

Suggested Book Lists:

1. Dr. Pratiksha Raghuvanoki. Handbook of Organic Farming.
2. Dushyant Gehlot. 2005. Organic Farming- standards, accreditation, certification and inspection. Agribios, India.
3. Gupta, M., 2004. Organic Agriculture Development in India. ABD publishers, Jaipur, India.
4. Guideline of National Project on Organic Farming, Department of Agriculture and Cooperation, INM Division, Ministry of Agriculture, Govt. of India.
5. Sathe, T.V. 2004, Vermiculture and Organic Farming. Daya Publishers.
6. Sharma, Arun K. 2002. A Handbook of Organic farming. Agrobios, India.
7. S.P. Palaniappan, K. Annadurai, 1999. Organic Farming- Theory and Practice, Scientific Publishers, Jodhpur, India.
8. Subha Rao, N.S. 200, Soil Microbiology, Oxford & IBH Publishers, New Delhi.
9. Organic Farming: The Ecological System- Agronomy Monograph 54, ASA, USA.

Ornithology

Credits: 04

Total Hours: 60(Theory)

Introduction: An introductory ornithology skill-based course provides a scientific study of birds, a branch of zoology that covers all aspects of avian life, including their physiology, behavior, anatomy, classification, and evolution. It encompasses fields like ecology, conservation, and the detailed study of bird songs, flight patterns, and migration. The discipline combines fieldwork with laboratory analysis and has contributed significantly to our understanding of evolution and biodiversity.

Course Objectives: The main objective of this course discussed below:

- Provide foundational and advanced concepts of avian biology and diversity.
- Familiarize students with anatomy, physiology, ecology, migration and evolution of birds.
- Develop understanding of bird behavior, breeding strategies and communication.
- Promote conservation awareness with reference to Indian threatened birds.
- Train students in field identification and bird documentation.

Course Learning Outcomes: After complete this course students will be able to:

- Identify major bird groups and explain their diversity and evolutionary relationships.
- Understand internal anatomy, physiology, flight mechanisms and adaptations.
- Analyze bird behavior including courtship, nesting and social patterns.
- Explain migration patterns, threats and conservation approaches.
- Apply knowledge in birdwatching, species documentation and conservation projects.

Detailed Course Content

Unit-I

Hours: 15

Ornithology and Diversity:

- Introduction to Ornithology and Avian Diversity
- Origin, classification and nomenclature of Aves.
- Avian Diversity across the country and in special context to Rajasthan.
- Evolution and Speciation of Aves.

Unit-II

Hours: 15

Anatomy and Physiology of Birds.

- Basic anatomy of birds and physiology of various systems.
- Laryngeal mechanism in sound note emission.
- Flight adaptations and beak modifications.
- Development, molting and coloration of feathers.

Unit-III

Hours: 15

Ecology and Ethology of Birds.

- Habitats of different types of birds.
- Courtship, mating and breeding behavior.
- Nesting and parental care in birds.
- Social behavior: communication, flocking and defence.

Unit-IV

Hours: 15

Migration and Avian Conservation Concepts.

- Causes, challenges and significance of migration.
- Major threats to Avian Diversity in India
- Advantages and disadvantages of various types of migration.
- Conservation and breeding Programmes w.s.r.t. Great Indian Bustard and Vultures.

Suggested Book Lists:

1. Ali, S., & Ripley, S. D. (1971–1987). *Handbook of the Birds of India and Pakistan: Together with Those of Bangladesh, Nepal, Sikkim, Bhutan and Sri Lanka* (10 Vols.). Oxford University Press.
2. Bock, W. (2009). *The Origin and Evolution of Birds* (2nd ed.). Oxford University Press.
3. BNHS. (2018). *Indian Bird Migration Atlas*. Bombay Natural History Society.
4. Cavanagh, P. (2024). *How Birds Fly: The Science and Art of Avian Flight*. Firefly Books.
5. Dyke, G., & Kaiser, G. (Eds.). (2011). *Living Dinosaurs: The Evolutionary History of Modern Birds*. Wiley-Blackwell.
6. Elphick, J., & Lovejoy, T. E. (2011). *The Atlas of Bird Migration: Tracing the Great Journeys of the World's Birds*. Penguin Random House.
7. Futuyma, D. J. (2021). *How Birds Evolve: What Science Reveals About Their Origin, Lives, and Diversity*. Princeton University Press.
8. Grimmett, R., Inskipp, C., & Inskipp, T. (2016). *Birds of the Indian Subcontinent*. Bloomsbury.
9. Kricher, J. (2020). *Peterson Reference Guide to Bird Behavior*. Mariner Books.
10. Lovette, I. J., & Fitzpatrick, J. W. (Eds.). (2016). *Handbook of Bird Biology* (3rd ed.). Wiley-Blackwell (Cornell Lab of Ornithology).
11. Striedter, G. F., & Iwaniuk, A. N. (2025). *Bird Brains and Behavior: A Synthesis*. MIT Press.
12. Sutherland, W., Newton, I., & Green, R. (Eds.). (2004). *Bird Ecology and Conservation: A Handbook of Techniques*. Oxford University Press.

प्रयोजनमूलक हिन्दी

Credits: 04

Total Hours: 60(Theory)

प्रस्तावना (Introduction): प्रयोजनमूलक हिन्दी वह हिन्दी है जिसका प्रयोग किसी विशेष उद्देश्य या कार्य के लिए किया जाता है। यह एक व्यावहारिक भाषा है, जिसका उपयोग प्रशासन, शिक्षा, व्यापार, विज्ञान, तकनीकी लेखन, पत्रकारिता और न्यायालय जैसे विभिन्न कार्यक्षेत्रों में होता है। इसे 'कामकाजी हिन्दी' या 'व्यावहारिक हिन्दी' भी कहते हैं। प्रयोजनमूलक हिन्दी का अध्ययन छात्रों को व्यावहारिक भाषा कौशल सिखाता है, जिससे वे रोजगार के अवसरों के लिए तैयार होते हैं।

पाठ्यक्रम के उद्देश्य (Course Objective): इसका मुख्य उद्देश्य की नीचे चर्चा की गयी है:

- विद्यार्थी की भाषाई दक्षता और भाषा कौशल को बढ़ावा देना।
- विभिन्न क्षेत्रों में हिन्दी के प्रयोग की जानकारी देना।
- रोजगार सम्बन्धी क्षेत्रों के लिए तैयार करना।
- कार्यालयी और व्यावसायिक हिंदी की समझ को विकसित करना।
- कार्यालयों में व्यावहारिक कार्य के विभिन्न पक्षों से अवगत कराना।

पाठ्यक्रम अधिगम प्रतिफल (Course Learning Outcomes)

- विद्यार्थी कार्यालयी और व्यावसायिक हिंदी की विशेषता से परिचित होंगे।
- विद्यार्थी हिन्दी के विविध रूपों से परिचित होंगे।
- विद्यार्थी टिप्पण, प्रारूपण, प्रतिवेदन, विज्ञप्ति तैयार करना सीख सकेंगे।
- कार्यालयों में होने वाले व्यावहारिक कार्य का ज्ञान प्राप्त कर सकेंगे।

Detailed Course Content (विस्तृत पाठ्यक्रम सामग्री)

इकाई- I

Hours: 15

- हिन्दी के विविध रूप - संचार भाषा, संपर्क भाषा, सर्जनात्मक भाषा, राजभाषा, मातृभाषा।
- कार्यालयी या व्यावहारिक हिन्दी - प्रारूपण, टिप्पण, प्रतिवेदन, विज्ञप्ति तैयार करना, पत्र लेखन (औपचारिक व अनौपचारिक लेखन), संक्षेपण, पल्लवन।

इकाई- II

Hours: 15

- पत्रकारिता - स्वरूप भेद और महत्व ; समाचार लेखन- समाचार का अर्थ , समाचार लेखन के तत्व ,समाचार और खबर में अंतर,समाचार प्राप्ति के स्रोत,समाचार लेखन का महत्व ।
- प्रेस विज्ञप्ति - अर्थ प्रकार व महत्व ; विज्ञापन - अर्थ प्रकार व महत्व; साक्षात्कार - अर्थ, साक्षात्कार के चरण,साक्षात्कार के प्रकार व महत्व ।

इकाई- III

Hours: 15

- मीडिया का स्वरूप और प्रकार -समाज में मीडिया की भूमिका ; फीचर लेखन - अर्थ व महत्व, फीचर लेखन की विशेषताएं,फीचर लेखन व समाचार लेखन में अंतर ।
- रेडियो नाटक -अर्थ व परम्परा,सिनेमा, रंगमंच और रेडियो नाटक - समानता व अंतर,रेडियो नाटक में ध्वनि संकेतों की महत्वता ,रेडियो नाटक की अवधि ।
- ब्लॉगिंग -अर्थ व प्रकार ,ब्लॉगिंग की सामान्य विशेषताएं ,महत्व, न्यू मीडिया लेखन और ब्लॉगिंग ।

इकाई- IV

Hours: 15

- पारिभाषिक शब्दावली : अर्थ और स्वरूप, पारिभाषिक शब्दावली के प्रकार, पारिभाषिक शब्दावली के अभिलक्षण, पारिभाषिक शब्दावली की विकास प्रक्रिया ,पारिभाषिक शब्दावली निर्माण की परंपरा, पारिभाषिक शब्दावली संबंधी विभिन्न विचारधाराएं, पारिभाषिक शब्दावली निर्माण की युक्तियां / तकनीकें ।
- ज्ञान-विज्ञान के विभिन्न क्षेत्रों की पारिभाषिक शब्दावली-वैज्ञानिक एवं तकनीकी शब्दावली निर्माण के सिद्धांत ।

Suggested Readings / सहायक ग्रंथ:

1. प्रयोजनमूलक हिंदी, संपादक, डॉ. रवीन्द्रनाथ श्रीवास्तव, केन्द्रीय हिन्दी संस्थान, आगरा ।
2. प्रयोजनमूलक हिन्दी: सिद्धांत और प्रयोग, डॉ. दंगल झाल्टे, वाणी प्रकाशन, नई दिल्ली ।
3. कार्यालय कार्यविधि, रामचंद्र सिंह सागर, आत्माराम एंड संस, नई दिल्ली ।
4. कार्यालयी हिन्दी (प्राज्ञ पाठशाला), संयोजन एवं संपादन, एम.एल बहादुर सिंह, राजभाषा विभाग गृहमंत्रालय, नई दिल्ली ।
5. प्रयोजनपरक हिन्दी - प्रो. सूर्यप्रसाद दीक्षित, डॉ. योगेन्द्र प्रताप सिंह, सुलभ प्रकाशन, लखनऊ ।
6. अभिव्यक्ति और माध्यम, एनसीईआरटी, नई दिल्ली ।
7. अनुवाद और पारिभाषिक शब्दावली, लेखक- सुरेश कुमार, ललित मोहन बहुगुणा, कृष्ण कुमार गोस्वामी, सम्पादक- सुरेश कुमार, केन्द्रीय हिन्दी संस्थान, आगरा ।

संस्कृत रचना और अनुवाद

Credits: 04

Total Hours: 60(Theory)

प्रस्तावना (Introduction): संस्कृत रचना और अनुवाद (Sanskrit Rachna aur Anuvad) का अर्थ संस्कृत भाषा में साहित्य का निर्माण (रचना) करना और किसी अन्य भाषा से संस्कृत में या संस्कृत से किसी अन्य भाषा में पाठ का रूपांतरण (अनुवाद) करना है, जिसमें संस्कृत के व्याकरण, शब्द-शक्ति और वाक्य-विन्यास (जैसे 'बालकः पठति' - 'लड़का पढ़ता है') के नियमों का पालन करते हुए मूल भाव को बनाए रखा जाता है, जो भारतीय संस्कृति और ज्ञान-विज्ञान का आधार है, जिसमें ऋग्वेद, पाणिनि की अष्टाध्यायी, और कालिदास जैसे महान रचनाकारों का योगदान है।

पाठ्यक्रम के उद्देश्य (Course Objective): इसका मुख्य उद्देश्य की नीचे चर्चा की गयी है:

- विद्यार्थी संस्कृत वाक्य-विन्यास, शब्द-रूप, धातुरूप, समास, तद्धित-कृत प्रत्ययों का प्रयोग समझ सकेंगे।
- संस्कृत गद्य एवं पद्य की संरचना तथा शैलीगत भेदों को पहचान सकेंगे।
- संस्कृत से हिन्दी/हिन्दी से संस्कृत में अनुवाद की मूलभूत प्रक्रियाएँ समझ सकेंगे।
- रचनानुवाद के लिए आवश्यक भाषिक, व्याकरणिक और संदर्भ-सम्बन्धी सिद्धांतों का ज्ञान प्राप्त करेंगे।
- संस्कृत के किसी भी वाक्य/अनुच्छेद का संदर्भानुकूल अर्थ निकाल सकेंगे।
- पद-विश्लेषण, संधि-विच्छेद, समास-विग्रह और अर्थ-व्याख्या में दक्ष हो सकेंगे।
- रचनानुवादकौमुदी के माध्यम से साहित्यिक शैली, भाषा-शुद्धता और प्रयोग-सौष्ठव का ज्ञान प्राप्त करेंगे।
- विभिन्न कथा, संवाद, वर्णनात्मक और निबंधात्मक संस्कृत-पैटर्न को समझकर नए वाक्य बना सकेंगे।
- डिजिटल ग्रंथों, ई-शब्दसूची और अनुवाद उपकरणों का शैक्षणिक उपयोग कर सकेंगे।

पाठ्यक्रम अधिगम प्रतिफल (Course Learning Outcomes)

- संस्कृत से हिन्दी अथवा अंग्रेज़ी में सही, अर्थपूर्ण और प्रसंगानुकूल अनुवाद कर सकेंगे।
- हिन्दी वाक्यों को संस्कृत में व्याकरण-सम्मत एवं प्रवाहपूर्ण रूप में परिवर्तित कर सकेंगे।
- संधि, समास, कारक, विभक्ति, कालरूप, धातुप्रयोग आदि का व्यावहारिक प्रयोग सिद्ध हो सकेगा।
- जटिल संस्कृत वाक्यों को सरल, फिर पुनः जटिल संरचना में रूपांतरित करने का कौशल विकसित होगा।
- छात्र स्वयं संस्कृत में वाक्य-अनुच्छेद-संवाद-लघुकथा रच सकेंगे।
- संस्कृत वाक्यों की भाषिक त्रुटियाँ पहचानकर संपादन एवं सुधार कर सकेंगे।

- पाठानुवाद में संदर्भ, भाव-सूत्र और मुख्य संदेश को पहचानने की क्षमता विकसित करेंगे।
- संस्कृत में सरल, स्पष्ट, शुद्ध अभिव्यक्ति का कौशल प्राप्त करेंगे।
- अनूदित सामग्री को प्रभावी रूप से समझाने व प्रस्तुत करने की क्षमता विकसित होगी।
- छात्र संस्कृत भाषा को व्यावहारिक, प्रयोगात्मक रूप में उपयोग करना सीखेंगे।
- भाषिक शुद्धता, संरचनात्मक दक्षता और सांस्कृतिक संवेदनशीलता विकसित करेंगे।
- प्रतियोगी परीक्षाओं, अध्यापन, अनुवाद कार्य तथा शोध-लेखन में सक्षम होंगे।

Detailed Course Content (विस्तृत पाठ्यक्रम सामग्री)

इकाई- I

Hours: 15

गण आधारित अनुवाद: डॉ. कपिल देव द्विवेदी कृत रचनानुवादकौमुदी के अभ्यास सं. 20 से 34 तक में वर्णित पाठ्य।

इकाई- II

Hours: 15

कृदन्त आधारित अनुवाद: डॉ. कपिल देव द्विवेदी कृत रचनानुवादकौमुदी के अभ्यास सं. 35 से 45 तक में वर्णित पाठ्य।

इकाई- III

Hours: 15

समास आधारित अनुवाद: डॉ. कपिल देव द्विवेदी कृत रचनानुवादकौमुदी के अभ्यास सं. 46 से 51 तक में वर्णित पाठ्य।

इकाई- IV

Hours: 15

तद्धितप्रत्यय आधारित अनुवाद: डॉ. कपिल देव द्विवेदी कृत रचनानुवादकौमुदी के अभ्यास सं. 52 से 59 तक में वर्णित पाठ्य।

Suggested Readings / सहायक ग्रंथ:

1. डॉ. कपिल देव द्विवेदी, रचनानुवादकौमुदी, विश्वविद्यालय प्रकाशन, वाराणसी।

Web Resources -

रचनानुवादकौमुदी - <https://share.google/o7mIppzpAV5oxH1EJ>

Shivam

Prasanna
7341111444
प्रभासी अकादमिक प्रथम

V