



# DEVI AHILYA VISHWAVIDYALAYA, INDORE

Deendayal Upadhyay Kaushal Kendra (DDU-KK)

1.1.1

Syllabus of all programs



**Syllabus and COs**  
**for**  
**B.Voc (Nutrition & Dietetics)**

**DEEN DAYAL UPADHYAY KAUSHAL KENDRA, DAVV, INDORE**

**B.Voc (Nutrition & Dietetics)**

**SEMESTER I**

**BVC-ND 11: Business Communication (English)**

**Course Outcomes:**

CO 1: The student will be able to comprehend the importance of verbal and non-verbal communication and also apply the basic principles to communicate effectively.

**Unit I :** Understanding the basic structure used in English Language for formation and comparing it with that of our primary language, understanding and identifying 'Sense of Sentence', identifying and defining 'Subject' and 'Verb', Concept of Verbs and Verb Forms.

**Unit II:** Structures of Present, Past, Continuous and Future Sentence formation with First, Second and Third forms of Verbs, learning usage of Helping Verbs like Has, Have and Had, do, does, did, will, shall etc., knowing Subject-Verb Agreement principles, knowing 'Subject Modifiers' and their usage in sentence formation.

**Unit III :** Structures of Sense of Being (SoB) sentences, and for 'Sense of Possession (SoP)', knowing the type of sentences, usage of helping verbs like 'is/am/are/was/were' etc as Main Verbs for Present, Past, Continuous and Future times senses.

**Unit IV:** Sentence Structures using 'THERE' and 'IT', constructing sentences denoting the 'Location' of the subject with 'THERE', handling 'identified' and 'unidentified' Subjects, constructing sentences with 'IT' where 'Active Subject' is not available.

**Unit V:** Understanding 'Sense' of Grammar in special reference to Primary Language, usage of Pronoun, Articles and Prepositions.

**Unit VI:** Sentence constructions using 'Modals' like can, could, should, must, have to, will be able to, should have, must have etc.

**Unit VII:** Communication and English Lab Sessions to reinforce and enhance the effectiveness of Classroom Session.

Section A: These sessions to cover Verb and Verb Form vocabulary, Word vocabulary, 'Group of Words' vocabulary, Grammar aspects.

Section B: Elementary Reading, Listening and Writing skills practice and 'Trade Specific Vocabulary building.

**Text & Reference Books:**

1. Expressions, A language Lbas for English, C. Sumant, Publisher : 'iGrowth'.
2. SuperFast English and Instant English , Abdul Salam Chaus, Publisher : Salaam Chaus, Jafar Nagar, Masjid Complex, 110, Jafar Nagar, Nagpur.
3. How to Translate into English, Prof. Rajendra Prasad Sinha, Bharti Bhawan, 4271/3, Ansari Road, Dariya Ganj, New Delhi

## **BVC-ND 12: Basic Computer Application**

### **Course Outcomes:**

CO 1: To promote professional excellence in the area of Cargo Logistics Management towards National Prosperity through Sustainable Development.

**Unit I: Fundamentals of Computers:** Identification of various hardware components of a computer system, Architecture and types of Computers. Hardware- Input, Output, Processing, Storage and Networking devices with their working principals. Software - System and Application Software. Computer Languages - Generation of Languages and their Features. Introduction to Information Technology- Data, Information, role of Information System in organization, computer based Information System, latest trends and challenges of information Systems, Information System applications in Air cargo, water Cargo, road and railway cargo, use of RFID and GPS.

**Unit II: Familiarization of various Operating Systems:** WINDOWS: Basic Operations, Utilities and Features (Explorer to manage files). UNIX/LINUX: Introduction, Features and Basic Commands, introduction to mobile operating system – ANDROID and mobile applications. Fundamentals of Networking - types of networks (LAN, WAN, MAN), Network topologies, and Components of Computer Network -Server, Workstation, NIC, Hubs, Switchers, Cables etc. Internet and its use in business – e-commerce, business communication, sending documents, E-mail, www, Searching, Uploading and Downloading from Internet, Hardware and Software requirement of Internet, Search Engines, Browser, Video conferencing. Introduction to mobile communication and mobile computing, Computer Virus, Trojan horse and Worms and their Prevention.

### **Unit III: Application Software (Open Office Automation Software):**

*Word Processing Software-* Word Processing Basics, spell check and grammar, Formatting Text and Documents, Headers, Footers, Tables, Working with Graphics, Templates, printing documents, advance report formatting, Introduction to Mail Merge  
*Presentation Software* - Presentation software Basics, Creating Presentation, slide layouts, working with Text, Graphics, pictures, audio and video in presentation, Slide transition, Custom animation, managing slide shows.

**Unit IV: Spreadsheet Software:** Working with cell and cell Addresses, Inserting and Deleting Cells, rows and columns, cell ranges, Formatting and styles, entering formula, inbuilt simple Functions, Working with multiple sheets, Visual presentation of data using charts, adding Graphics, Table format, sorting and filtering data, Auto fill.

**Unit V:** Advance Features of Spreadsheet Software – logical and text functions, Validation, Conditional formatting, Editing charts, Using Worksheet as Databases, Subtotals, Goal Seek, Solver, Pivot tables, Protection of workbooks, managing large spreadsheets. Case Study: Role of Information Technology for Supply Chain Management. Case Study: Role of internet in logistics and Supply chain management.

### **Text & Reference Books:**

1. Antony Thomas. Information Technology for Office. Pratibha Publications.
2. Gini Courter & Annette Marquis. Ms-Office 2007: BPB Publications.
3. Leon A & Leon M, Introduction to Computers, Vikas Publication.

4. Leon, Fundamentals of Information Technology, Vikas Publication.
5. Kakkar D.N., Goyal R, Computer Applications in Management, New Age.
6. Lucas, Henry C., Information Technology for Management, New Delhi, Tata McGraw-Hill.
7. P.K. Sinha, Computer Fundamentals, New Delhi, BPB Publications Christian Crumlish, ABCs of the Internet, New Delhi, BPB Publications.
8. Das, Sumitabha, Unix Concepts and Applications, New Delhi, Tata McGraw Hill Pub. Co. Ltd.

### **BVC- ND 13: Principles of Nutrition I**

#### **Course Outcomes:**

CO 1: It will help to understand the basics of nutrition and dietetics.

CO 2: This subject will make students learn the concept of roots of nutrition in terms of micro and macro nutrients.

**Unit I:** Introduction to food, nutrition and dietetics- Scope of nutrition and dietetics, Basic concept of Food and Nutrition, Nutritional status, Health and Fitness, Importance of nutrition in all stages of life cycle, Job opportunities in food, nutrition and dietetics- Food industries and food service system, At Community kitchen, Instructor in ICDS integrated child development scheme, At NRC nutrition rehabilitation center, As a feeding demonstrator, As Infant and young child feeding demonstrator, As a junior research associate, At Pharm industries, In health clubs and fitness center, In school kitchen, As a content writer in nutrition journalism, Self-employed in small scale food industries.

**Unit II:** Carbohydrates- Introduction to nutrients, carbohydrates nutritional classification, function, digestion and absorption, deficiency and excess, sources and requirement. Fiber- definition, types, roles of fiber in prevention of disease.

**Unit III:** Protein- Nutritional classification, functions, digestion and absorption, sources and requirements, deficiency. Methods for the determination of protein quality- dc, bv, npu, npr, per and ndper. Classification of amino acids- essential and non-essential, functions and deficiency.

**Unit IV:** Lipids- Classification, functions, digestion and absorption, sources and requirements, deficiency, essential fatty acids- functions, sources, deficiency. Water - distribution, functions, sources, requirements, dehydration and intoxication.

#### **Text & Reference Books:**

1. B. Srilakshmi, Nutrition Science, Fifth Edition, New Age International (P) Ltd, New Delhi (2008).
2. Ambika Shanmugam, Fundamentals Of Biochemistry For Medical Students, Seventh Edition, New Age Publishing Pvt. Ltd., New Delhi (1986).
3. Joshi. A.S, "Nutrition & Dietetics", Third Edition, Tata Macgraw Hill Education Pvt. Ltd., New Delhi (2010).
4. R. Passmore and M. A. Eastwood, Human Nutrition and Dietetics, 8<sup>th</sup> language book society/ churchill livingstone, Hong Kong, (1986).

5. Neiman N. Catherine, Nutrition, WM. C. Brown Publishers. USA (1990).
6. U. Satyanarayana and U. Chakrapani, Biochemistry, Third edition, Uppala author-publisher interlinks, Vijayawada (2010).

## **PRACTICALS**

- Practical demonstration of nutrients, Classification of macro and micronutrients, Identify the types of nutrients in food displayed, Visit to Anganwadi and hospital, for project.

### **BVC-ND 14: Food Science**

#### **Course Outcomes:**

- CO1: It enables students to understand the basic food groups, structure, chemical composition of all the food groups.
- CO 2: Also, know about scientific approach towards various cooking techniques.

**Unit I:** Introduction to food science- Definition: Food, food science and balance diet, five food group. Functions of food – energy yielding, body building and protective foods. Cooking principles and methods- Principle of cooking, method of cooking- moist, dry and combination heat methods of cooking, merits and demerits. Microwave cooking: principle, merits & demerits. Solar cooking- solar cooker and solar oven- principle.

**Unit II:** Cereals, pulses, nuts & oil seeds- Cereals: wheat- structure, composition and nutritive value, milling process, by products. gluten formation. Rice- structure, composition and nutritive value, milling process, by products, parboiling methods, merits. Millet- types and nutritive value. Role of cereals in cookery. Pulses: composition and nutritive value, factors affecting cooking quality of pulses. Germination- process and its advantages. Role of pulses in cookery. Nuts and oil seeds: nuts- composition of specific nuts (almonds, coconut, groundnut, walnut) and their importance, role of nuts in cookery. Oil seeds- composition of specific oil seeds (flaxseed, pumpkin seed, gingelly seed) and their importance. Role of oil seeds in cookery.

**Unit III:** Vegetables, Fruits and Sugar- Vegetables: classification, composition and nutritive value. Pigments- classification, selection, effect of acid, alkali medium on the pigments, changes during cooking of vegetables, role of vegetables in cookery. Fruits: classification, composition and nutritive value, changes during ripening of fruits, browning reaction- types and its prevention. Sugar: types of sugar and related products, stages of sugar cookery, crystallization- meaning, types.

**Unit IV:** Milk, Egg and Fleshly foods- Milk and milk products: composition and nutritive value, types of milk and milk products. Pasteurization- definition and types. Egg: structure, composition and nutritive value, quality of egg, factors affecting foam formation, factors affecting the coagulation of egg. Uses of egg in cookery. Fleshly foods: meat- structure, composition and nutritive value of meat, post mortem changes, ageing and tenderness of meat. Poultry- classification, composition and nutritive value and poultry cooking. Fish- classification, composition and nutritive value, selection and methods of cooking.

**Unit V:** Fats, Beverages and Spices-Fats and oils: composition and nutritive value, smoking temperature. Rancidity- Types and prevention. Role of fats and oils in cookery.

Beverages: classification, nutritive value- coffee, tea, cocoa, milk based beverages, fruit juices and aerated beverages. Spices and condiments: classification, uses, roles of spices in cookery.

**Text & Reference Books:**

1. Shrilakshmi, B, "Food Science:, 5<sup>th</sup> edition, New Age International Pvt. Ltd. Publishers, New Delhi (2010)
2. Mudambi. S.R, Rao, S.M, & Rajagopal.M.V, "Food Science", New Age International Pvt. Ltd. Publishers, New Delhi (2007).
3. Food and Agriculture Organization. (1980) Manual of Food Quality Control. Additive Contaminants Techniques. Rome.
4. Fuller, G.W. (1999) New Food Product Development. From concept to market place. CRC press, New York.
5. Graf E and Saguy I S, (1991) Principles and practices for the safe processing of foods. ButterwHeinemann Ltd., Oxford.
6. Mahindru, S N (2000) Food Additives- Characteristics Detection and Estimation. Tata Mc Graw Hill Publishing Co. Ltd

**PRACTICALS**

- Learning the uses of weights, measuring cups, measuring spoon weighing scales and standardization equipment in nutrition planning, Cooking demonstration on various cooking methods, Food group cooking with labelling of nutrients.

**BVC-ND 15: Market Survey for Food Groups**

The students are supposed to identify and categorize foods available according to different food groups. A detailed market survey and visits to different locations and departmental stores are to be covered.

## **SEMESTER II**

### **BVC-ND 21: Introduction to Human Physiology**

#### **Course Outcomes:**

- CO 1: It will help to understand the anatomy and physiology of each and every organ and tissue involved in the functioning of the body.
- CO 2: It help students to understand the etiology of diseases.

**Unit I:** General principles of physiology.

**Unit II:** Blood and circulatory system- blood and its composition, functions of each constituent of blood, blood groups, structure and functions of heart, blood pressure, heart rate, cardiac output and their regulation.

**Unit III:** Digestive system – structure and functions of alimentary tract. Functions of various secretions and juices – saliva, gastric, bile, intestinal, pancreatic. Functions of enzymes in digestion. Common problems of digestive tract – vomiting, constipation, diarrhea.

**Unit IV:** Excretory system – structure and functions of (a) kidney (b) ureter (c) bladder (d) skin. Urine -formation of urine, composition of normal and abnormal urine.

**Unit V:** Reproductive system – female reproductive system – organs, structure and functions male reproductive system – structure and functions, menstruation, menstrual cycle, puberty, menarche, menopause, fertilization of ovum, conception, implantation.

**Unit VI:** Glands and endocrine system: Liver- structure and function, Gall bladder - structure and function, Pancreas - structure and function, Endocrine system, Endocrine glands - structure and function. Hormone - types and functions, role in metabolism. Endocrine disorders, Regulation of hormone secretion.

#### **Text & Reference Books:**

1. K sembulingam, prem sembulingam. Essentials of Medical Physiology.
2. Human physiology – Introduction to Human Physiology, Ignou Textbook.
3. Garrows. Textbook of Physiology

#### **PRACTICALS**

- Understanding and reading biochemical parameters ( nutrition related)
- Skeletal and organ study ( with model skeleton)



## **BVC-ND 22: Concept and Scope of Community Nutrition**

### **Course Outcomes:**

- CO 1: To enable students to understand the schemes, policies run by various agencies and government,
- CO 2: Understanding health and nutrition related problems in community and at national level.

**Unit I:** Food availability and factors affecting food availability and intake. Food security and adequacy of diets.

**Unit II:** Nutritional problems of communities and implications for public health. Common nutritional problems in India. Incidence – national, regional. Causes: nutritional and non-nutritional signs, symptoms, effect of deficiency and treatment, PEM, Micronutrient deficiencies, Fluorosis, Correction/improvements in diets.

**Unit III:** Schemes and programs in India to combat nutritional problems in India. Role of international, national and voluntary agencies and government departments.

**Unit IV:** Hazards to community health and nutritional status- Adulteration in food, Pollution of water, air, Waste management, Industrial effluents, sewage, Pesticide residue in food, Toxins present in food – mycotoxins etc.

**Unit V:** Nutrition policy of India and plan of action.

### **Text & Reference Books:**

1. ICMR: growth and development of Indian infants and children, New Delhi, 1972.
2. Methodology of nutritional surveillance report of a joint FAO/UNICEF/WHO expert committee, tech. Report series.
3. Shukla, P. K.: Nutritional Problems of India, prentice hall of India (p) ltd. New Delhi, 1982.

### **PRACTICALS**

- Assessment of nutritional status – meaning, need, objectives and importance. Use of clinical signs, anthropometry, biochemical tests, and biophysical methods.
- Assessment of food and nutrient intake through recall, record, weights
- Field visit to integrated child development service center, mid day meal program.

## **BVC-ND 23: Principles of Nutrition II**

### **Course Outcomes:**

CO 1: It will help to understand the basics of nutrition and dietetics.

CO 2: This subject will make students learn the concept of roots of nutrition in terms of micro and macro nutrients.

**Unit I:** Energy-units of energy- calorie, joule, determination of energy value of foods. BMR-definition of BMR, factors affecting metabolic rate.

**Unit II:** - Vitamins - Fat soluble vitamins (A, D, E, K): functions, sources, requirements, deficiency and excess. Water soluble vitamins (B1, B2, B3, B4, B6, B12 & C): Functions, sources, requirements, deficiency and excess.

**Unit III :-** Minerals- functions, sources, requirements, deficiency and excess of calcium, phosphorus, sodium, potassium, iron, iodine, fluorine, zinc and magnesium.

**Unit IV:-** Water and electrolyte balance – water intake and loss, composition of body fluids, regulation of water metabolism, effect of excess water intake, NaCl Depletion, Dehydration, electrolyte balance, active and passive transport, change in ICF and ECF volumes.

**Unit V:** - Role of dietary fiber and other carbohydrates in nutrition- Types of fiber, fiber content in food, role of fiber in regular diets, role of fiber in various diseases, fiber content of foods.

### **Text & Reference Books:**

1. B. Srilakshmi, Nutrition Science, Fifth Edition, New Age International (P) Ltd, New Delhi (2008).
2. Ambika Shanmugam, Fundamentals Of Biochemistry For Medical Students, Seventh Edition, New Age Publishing Pvt. Ltd., New Delhi (1986).
3. Joshi. A.S, "Nutrition & Dietetics", Third Edition, Tata Macgraw Hill Education Pvt. Ltd., New Delhi (2010).

## **BVC-ND 24: Institutional Management**

### **Course Outcomes:**

CO 1: It is helpful for understanding industrial

CO 2: Catering industries working, like inventory, certifications, safety norms, equipment's and various ways to cater to these industries.

**Unit I:** Introduction to food services and catering industry, development of food service institutions in India, types of services as affected by changes in the environment.

**Unit II:** Hospital food service as a specialty- characteristics, rates and services of the food production, service and management in hospitals. Role of the food service manager/dietitians.

**Unit III:** Organizations - types of organizations and characteristics. Organizational charts. Management of resources - capital, space, equipment and furniture, materials, staff, time and energy, procedures physical facility design and planning. Equipment selection.

**Unit IV:** Financial management (in brief since there is a separate subject food cost and quality control) - elements of financial management, budget systems and accounting, budget preparation. Food production and service operations.

**Unit V:** General planning, Preliminary planning, Consideration of patients with specific nutritional and dietary needs, labour use and productivity. Flow pattern.

### **Text & Reference Books:**

1. Livingston, G.E. (1979). Food service systems-analysis, design and implementation - academic press.
2. Powers, T. F. and powers, T. M. (1984). Food service operations planning and control. John Wiley & Sons.
3. Wood, C; kluge, E; annssem, P. (1978). The anatomy of food service design. C. B. I. Publishing Co Inc.
4. Boella, M. J. (1983). Personnel management in the hotel and catering industry. Hutchinson, London.
5. Drucker, P. S. (1975). Management. Allied publishers. New Delhi.
6. Hitchcock, M. J. (1980). Food service systems administration mac Millan. New York.
7. West, b. B. And wood, l. (1979). Food service in institutions. John wiley, New York.
8. Sethi, M; Malhan, S (1997). Catering management; an integrated approach. New Age international.

### **PRACTICALS**

- Understanding industrial food packaging and nutritional labeling
- Visit- departmental stores, (understanding racking of food, reading labeling)
- Evaluation of packaging and shelf life
- Visit to professional kitchen/ food processing and preservation certification course by FSSAI, government of India

### **BVC-ND 25: Environmental Studies**

#### **Course Outcomes:**

CO 1: The students should be aware of environmental factors and systems so as to understand and maintain echo friendly environment.

**Unit I:** Environment meaning, structure and type of environment, components of environment, society and resources. Man environment relationship: Approach to study man interaction with environment (historical to present day).

**Unit II:** Environmental degradation: Meaning of degradation, types of degradation, process of degradation, cause of degradation, Religious and philosophical factors, deforestation, agricultural development and degradation, population growth and degradation, urbanization and degradation, modern technology and degradation.

**Unit III:** Ecology: Definition of ecology and ecosystem. Types of ecosystem, components of ecosystem, functions of ecosystem, productivity and stability of ecosystem.

Environmental disasters: Meaning and concepts, types of hazards and disaster, man induced and natural hazards, global warming, ozone depletion, green house effect and other major environmental problems.

**Unit IV:** Environmental pollution: Air, water, solid, noise pollution. Meaning, definition, sources, types, adverse effects and methods of control.

**Unit V:** Environmental planning and management: Concepts, aspects and approaches, resources management, ecological management. Biosphere reserves, management of wild life. Environmental regulation and rules, Vision of Environment by govt. of India, Environmental policy, waste disposal rules and laws and legislation enacted by parliament for environmental protection.

**Text Book(s):**

1. Environmental Awareness : Dr. Dhananjay Verma, Published by : Madhya Pradesh Hindi Granth Academy.

**BVC-ND 26 Community Nutrition & Institutional Food Services System**

Project

**SEMESTER III**

**BVC-ND 31: Life Skills Management**

**Course Outcomes:**

- CO 1: Handle Stressful Situations
- CO 2: Understand their priorities
- CO 3: Cope with different Psychological Problems
- CO 4: Find Real Happiness

**UNIT I: Basics of Life Skills Management:** Understanding Self and Psychological Problems: Life Skills Management: Concepts and Applications, Basics of Brain-Structure, Hormones: Role of Hormones in changing mood and emotions, Role of genes, Understanding Memory. Normal Self: Concept of Normality. Characteristics of Healthy Personality, Levels of Personality Dysfunctions, Ways to offset depression. Anxiety: Symptoms and Dealing with anxiety. Managing Anger, and Right attitude towards competition. Understanding the reasons behind OCD and.

**Unit II: Managing Habits:** Neurology of Habits, Developing Discipline in creating new habits, will-power, Causes of Addictions, Changing destructive habits, Habits of highly effective people. Relaxation Techniques: Meditation, Effects of Meditation. Positive Attitude towards oneself, Equanimity in oneself, Happiness – a state of mind and related techniques.

**Unit III: Relationship Management:** Emotional Intelligence: Core Domain: Self Awareness, Self-Regulation, Social Awareness and Relationship Management. Relationship Management: Four Criteria for Effective Relationship Management, Competencies in the Relationship Management. Ability to size-up situations, Role of Empathy Basics of Interpersonal Communication: Understanding and Observing Non-Verbal Behavior, Listening skills. Profiling Personal Environments. Understanding the types of Personality & their Motivating-Factors. Concepts of healthy relationships.

**Unit IV: Stress Management:** Understanding the Physiology of Stress, Symptoms of Stress. Stress and Performance, effects of Stress on Learning, Oversensitivity, Focus and Concentration, Techniques of Stress Management. Concepts of Crisis Management, Dealing with Peer Pressure and Complexes, Assertiveness Training, Avoiding Groupthink, Dealing with distractions.

**Unit V: Mental Health and Wellness:** Concept of Wellness: Measures to improve Wellness. Sleeping and Mind, Yoga and Exercise, Concepts of Balanced Diet, Importance of Recreational Practice, Role of art in wellness, How imagination shapes our Mind-Set. Wellness Programs for Professionals.

### **BVC-ND 32: Nutritional Biochemistry**

#### **Course Outcomes:**

CO 1: Helps the students to understand all the biochemical process which takes place inside the body.

CO 2: About, How food interacts and affects these processes.

**Unit I:** Carbohydrates – structure and properties of mono-saccharides, di-saccharides, poly-saccharides. Study of intermediary metabolism of carbohydrates, glycolysis, aerobic, anaerobic, tricarboxylic acid cycle, significance of tea cycle integrating metabolism of carbohydrates protein and lipid, gluconeogenesis, glycogenesis, glycogenolysis, hexose monophosphate shunt.

**Unit II:** Proteins – structure, composition classification and function, structure of important proteins with special reference to insulin, myoglobin, and hemoglobin, binding proteins and their functions – nutritional implications, chemistry of amino acids, metabolism of proteins and amino acids – build up of amino acid pool. Urea cycle

**Unit III:** Lipids – definition, composition, classification, structure and properties, lipoproteins, metabolism of lipids, oxidation of fatty acids, unsaturated fatty acids, biosynthesis of cholesterol and regulation, bile acids and their metabolism, plasma lipoproteins – synthesis and metabolism

**Unit IV:** Enzymes – definition, classification specificity of enzymes -intracellular distribution, kinetics, inhibition, factors affecting enzyme activity, enzymes in clinical diagnosis.

**Unit V:** Nucleic acids – composition, functions, classification, structure and properties of dna and rna, genetic code – protein biosynthesis, basics of purine and pyrimidine nucleotides.

**Unit VI:** Hormones – mode of action, regulation of metabolism biochemical parameters. Endocrinological abnormalities and clinical diagnosis.

**Text & Reference Books:**

1. Dasgupta, S. K., Biochemistry Vol. I; N & Iii, Mc Millan Co. Of India Limited
2. Harper, H. A. Etal, A Review Of Physiological Chemistry, Los Altos,Lange Medical Publications, 1985.
3. Lehninger, a. L., principles of biochemistry

**PRACTICALS**

- Carbohydrates - qualitative tests for mono, di and polysaccharides and their identification in unknown mixtures
- Quantitative estimation of glucose, sucrose and lactose by titrimetric method
- Fats - properties of fats
- Proteins - qualitative tests for proteins
- Food adulteration

**BVC-ND 33: FOOD MICROBIOLOGY**

**Course Outcomes:**

CO 1: Helps students understand about the micro- organisms that inhibit, create, or contaminate food, including study of food spoilage, pathogens which create diseases and infections.

CO 2: About sanitation and hygiene norms.

**Unit I:** Introduction to Microbiology – Mold, Yeast, Bacteria, Viruses, Protozoa, General Classification Family, Genus, Species. Study of their morphology, cultural characteristics and biochemical activities. Important microorganisms in foods, general.

**Unit II:** Growth curve of a typical bacterial cell – Effect of intrinsic and extrinsic factors on growth of organisms, pH, water activity, 0- R potential, nutritional requirements, temperature, relative humidity and gaseous environment.

**Unit III:** Primary sources of micro-organisms in foods – Physical and chemical methods used in the destruction of micro-organisms, pasteurization, sterilization.

**Unit IV:** Fundamentals of control of micro-organisms in foods – Extrinsic and intrinsic parameters affecting growth and survival of organisms. Use of high and low temperature, controlling moisture as water content, freezing, freezing-drying, irradiation, and use of preservatives in food. Storage of food-correct handling and techniques of correct storage, Temperatures at which growth is retarded and bacteria are killed, Storage temperatures for different commodities to prevent growth or contamination and spoilage.

**Unit V:** Food spoilage and contamination in different kinds of foods and their prevention – Cereal and cereal products, pulses and legumes, Vegetables and fruits, Meat and meat products, Eggs and poultry, Milk and milk products.

**Unit VI:** Public health hazards due to contaminated foods – Food poisoning and infections - Causative agents, symptoms, sources and mode of transmission, foods involved, Method of prevention, Fungal toxins, Investigation and detection of food-borne disease outbreak.

**Unit VII:** Indices of food, milk and water sanitary quality. Microbiological criteria of food, water and milk testing. Food standards, PFA, FPO, BNS, MPO, Agmark, Codex Alimentarius.

#### **Text & Reference Books:**

1. Razier. C. and Westhoff D. C. Food Microbiology, 4th ed., 1988 New York.
2. Pelezar, M. (1988) Microbiolqgy V ed., McGraw Hill, N. Y.
3. James, M. Jay. Modern Food Microbiology 4th ed., CBS Publishers, New Delhi.

### **BVC-ND 34: Nutrition & Meal Planning**

#### **Course Outcomes:**

- CO 1: Enables students to understand the nutrient and food requirement at daily basis.
- CO 2: Enables students to understand the nutrient and food requirement at every stage of the life cycle.

**Unit I:** Minimum nutritional requirements and rda. Formulation of rda and dietary guidelines – reference man and reference woman.

**Unit II:** Body composition and changes through the life cycle.

**Unit III:** Role of macronutrients and micronutrients in meal planning. Proteins – factors affecting protein bio-availability including anti nutritional factors. Requirements. Lipids – types of fatty acids, role and nutritional significance (sfa, mufa, pufa, omeg3 fatty acids ). Carbohydrates –blood glucose and effects of different carbohydrates on blood glucose, glycemic index. Dietary fibre – classification, composition, properties and nutritional status significance. Vitamins, minerals and trace elements – physiological role, bioavailability and requirements. Water – functions, requirements.

**Unit IV:** Nutritional requirements for different age groups with rationale. Factors affecting these requirements.

**Unit V:** Effect of cooking and home processing on digestibility and nutritive value of foods.

**Unit VI:** Improving nutritional value through different methods – germination, fermentation, combination of foods.

**Unit VII:** Basic principles of meal planning.

**Unit VIII:** Nutritional considerations for planning meals for Adults – male and female, different levels of physical activity. Pregnancy and lactation. Feeding of young children 0 -3 years, Old age, Athletes.

**Text & Reference Books:**

1. Guthrie H.: Introductory Nutrition (6th Ed.) Times Mirror/Mostly College Publishing, 1986.
2. Robinson, Lawler: Normal & Therapeutic Nutrition (17th Ed.) Macmillan Publishing Co. 1986.
3. Swaminathan .: Advanced Textbook on Food & Nutrition Vol. 1 & N (2nd Ed. Revised \_ Enlarged) Bapp Co. 1985.
4. Robinson. Basic Nutrition and Diet Therapy (8th Edition)
5. Shills and Young. Modern Nutrition in Health and Disease.

**PRACTICALS**

- Development of low cost nutritious recipes for population groups vulnerable to nutritional deficiencies
- Effect of germination, fermentation, steaming, on nutritional value of food
- Understanding denaturation, Millard reaction, dry roasting, moist cooking
- Basics of egg cooking , sugar cooking
- Baking practical
- Microwave cooking

**BVC-ND 35 Industrial Internship**

Project

**SEMESTER IV**

**BVC-ND 41: Basics of Accounting**

**Course Contents:**

CO 1: The students should be able to understand the basic principles of accounting.

CO 2: Hands-on-training on TALLY will be helpful for implementation of these principles in real time applications.

**UNIT I:** Introduction: Introduction and Purpose of Accounting, uses of Accounting Information & Basic Accounting Concepts.

**UNIT II:** Accounting Structure: Process of Accounting, Journal, Ledger & Trial Balance based on double entry book keeping.

**UNIT III:** Practical System of Accounting: Cash Book, Sales & Purchase of goods. Bill of exchange, Bank Reconciliation Statements.



**UNIT IV:** Preparation of Financial Statements: Income Statements, (Profit and Loss A/C), Statement of Financial Position (Balance Sheet) and Adjustments (only Closing Stock, Prepaid, Outstanding, Unearned & Accrued), Valuation of Assets and Depreciation methods.

**UNIT V:** On the basis of Specialization: Case Study

### **PRACTICALS**

- Exploration of features of TALLY software.
- To create & design various types of documents related to accounting such as Cash Book, Sales & Purchase of goods. Bill of exchange etc.

### **Reference Book:**

1. T. S. Grewal, Introduction to accountancy, S. Chand & co. Ltd.

## **BVC-ND 42: Physiologic and Metabolic Changes**

### **Course Outcomes:**

CO 1: Students will be able to understand that affects the path physiology and anatomy.

CO 2: Also, the biochemical changes that occur due to changes occurring in diseased condition in every organ.

**Unit I:** Normal cellular processes, injury and response of cells to injurious agents, cellular adaptations.

**Unit II:** Regulation of food intake and pathogenesis of obesity and malnutrition and starvation.

**Unit III:** Pathophysiology of gi tract diseases – anatomic, physiologic and functional changes, impact on nutritional status and nutritional implications, post surgical complications and management, malabsorption syndrome.

**Unit IV:** Pathophysiology of liver diseases – progression of liver disease metabolic and nutritional implications, role of specific nutrients and alcohol.

**Unit V:** Diseases of the gall bladder and pancreas – pathophysiologic changes – metabolic and nutritional implications, dyslipidemias.

**Unit VI:** Cardio-vascular diseases – pathogenesis, role of nutrients in prevention – metabolic and nutritional implications, dyslipidemias.

**Unit VII:** Diseases of the renal system – etiology and pathogenesis – changes in function with progression of diseases, metabolic and nutritional implications, water and electrolyte balance.

**Unit VIII:** Cancer – carcinogenesis – pathogenesis and progression of cancer, role of nutrients, foodstuffs and food additives in cancer. Therapies and their clinical and metabolic implications.

**Unit IX:** Immunity and infection – diarrhea, aids, respiratory problems.

**Unit X:** Arthritis, osteoporosis – bone disorders.

**Text & Reference Books:**

1. Krause's Food and Nutrition Therapy, 14<sup>th</sup> Edition (2017) / Mahan and Raymon , Elseveir Publisher
2. Swaminathan .: Advanced Textbook on Food & Nutrition Vol. 1 & N (2nd Ed. Revised \_ Enlarged) Bapp Co. 1985.
3. Robinson. Basic Nutrition and Diet Therapy (8th Edition)
4. Shills and Young. Modern Nutrition in Health and Disease.

**PRACTICALS** – Visit to hospital and learning to read files

**BVC-ND 43: Diet Therapy**

**Unit I :** Assessment of nutritional status: methods and application. Direct methods – anthropometry, biochemical and clinical examination. Indirect methods – dietary surveys, vital statistics.

**Unit II:** Common nutritional deficiencies. Etiology, prevalence, clinical features, prevention and management of nutritional deficiencies PEM. Micronutrient deficiencies such as vitamin a deficiency, nutritional anemias, iodine deficiency disorders

**Unit III:** Introduction to diet therapy. Basic concepts of diet therapy. Therapeutic modifications of the normal diet

**Unit IV:** Common diseases/ disorders , Etiology, clinical features and nutritional management of: Febrile disorders and HIV-AIDS, Diarrhoea, constipation , jaundice, peptic ulcer, Underweight, overweight and obesity, Diabetes Mellitus, Cardiovascular diseases Anemia, PEM, marasmus, osteoporosis

**Text & Reference Books:**

1. Antia F. P.: Clinical Dietetics and Nutrition, 3rd ed., Oxford University, Press, Delhi, Reprinted in 1989.
2. Robinson, C. H, M. R. Lawlwr, W. L. Chenoweth and A. E. Garwick: Normal and Therapeutic Nutrition, 17th ed;, Mac Millan Pub. Co.
3. Willims, S. R.: Nutrition and DietTherapy, 4th ed., The C. V. Mosby Co., S1. Louis, 1981.
4. Krause's Food and Nutrition Therapy, 14<sup>th</sup> Edition (2017) / Mahan and Raymon , Elseveir Publisher
5. Willims S. R.: Essentials of Nutrition and Diet Therapy, 4th ed., Mosby College Pub. S. Louis, 1986.
6. Thomas, B.: Manual of Dietetic Practice, 1996,.
7. ASPEN; Nutrition Support, Dietetics

## **PRACTICALS - Menu planning**

- Identification of 5 food group systems with foods available on daily basis
- Use of exchange list
- Food standardization and portion size
- Understanding recommended dietary allowances
- Execution of menu planning ( reference man and reference woman)

### **BVC-ND 44: Hospital Internship**

#### **SEMESTER V**

### **BVC-ND 51: Women and Child Nutrition**

#### **Course Outcomes:**

- CO 1: Nutrition requirement right from conception till adolescent, their problems and ways to solve it.
- CO 2: Policies and programs for mother and child health and nutrition.

**Unit I:** Nutrition and food requirements for expectant mothers -: Physiological changes, Preconception Nutrition, Common Complication, Food, Nutritional Requirements, General dietary Problems.

**Unit II:** Nutritional and Food requirements of Lactating women -: Role of Hormones, Nutritional requirements, Food requirements.

**Unit III:** Nutritional and Food requirements for Infants -: Low birth weight, Preterm Baby, Breastfeed and Weaning, Malnutrition, Artificial Feedings, Nutritional and Food requirements.

**Unit IV:** Nutritional and Food requirements for pre school (1 to 6 years) and school children. Nutrition related problems of pre school kids, Feeding programs, School lunch programs, Nutritional and Food requirements.

**Unit V:** Policies and Programs for Women and child.

#### **Text & Reference Books:**

1. Antia F. P.: Clinical Dietetics and Nutrition, 3rd ed., Oxford University, Press, Delhi, Reprinted in 1989.
2. Krause's Food and Nutrition Therapy, 14<sup>th</sup> Edition (2017) / Mahan and Raymon , Elseveir Publisher
3. ASPEN; Nutrition Support, Dietetics (2012)

## **BVC-ND 52: Nutrition Education and Diet Counselling**

### **Course Outcomes:**

CO 1: Students will be able to grasp the counselling techniques to be able to reach out to individual clients, groups and society.

CO 2: They will learn the hierarchy to counselling pattern right from taking history till follow ups.

**Unit I:** Dietician as part of the medical team and outreach services.

**Unit II:** Clinical information – medical history and patient profile techniques of obtaining relevant information, retrospective information, dietary diagnosis, assessing food and nutrient intakes, lifestyles, physical activity, stress, nutritional status. Correlating relevant information and identifying areas of need.

**Unit III:** The care process – setting goals and objectives short term and long term, counselling and patient education, dietary prescription.

**Unit IV:** Motivating patients.

**Unit V:** Working with –Hospitalized patients (adults, paediatric, elderly, and handicapped), adjusting and adopting to individual needs. Outpatients (adults, paediatric, elderly, handicapped), patients' education, techniques and modes.

**Unit VI:** Follow up, monitoring and evaluation of outcome, home visits.

**Unit VII:** Maintaining records, reporting findings, applying findings, resources and aids for education and counselling, terminating counselling, education for individual patients, use of regional language, and linguistics in communication process, counselling and education.

### **Text & Reference Books:**

1. Mahan, L. K. and Escott Stump. S. (2008) Krause's Food & Nutrition Therapy 12<sup>th</sup> ed. Saunders-Elsevier
2. Achaya, K.T. (Ed) (1984) Interface between Agriculture, Nutrition and Food Science, The United National University.
3. Beaton, G. H and Bengoa, J. M. (Eds ) (1996) Nutrition in Preventive Medicine, WHO.
4. Gibney M. J., Margetts, B.M., Kearney, J. M. Arab, I., (Eds) (2004) Public Health Nutrition, NS Blackwell Publishing.
5. Gopalan, C. (Ed) (1987) Combating Under nutrition- Basic Issues and Practical Approaches, Nutrition Foundation of India.

6. Kaufman M. (2007) Nutrition in promoting the public health strategies, principles and practices. Jones and Barlett Publishers.
7. Park, K. (2009) Park's Textbook of Preventive and Social Medicine, 20<sup>th</sup> ed. Jabalpur M/s. Banarsidas Bhanot.

## **PRACTICALS**

- Use of various audio visual aids in educating people
- Making power point presentation and presentation skills
- Learning to make print media
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## **BVC-ND 53: SPORTS NUTRITION**

### **Course Outcomes:**

- CO 1: Understanding the nutritional requirement of different sports, fat loss, and muscle gain.
- CO 2: About various supplements, cryogenic aids and levels of fitness.

**Unit I:** Concept of sports nutrition

**Unit II :-** Knowing your clients and setting their goals –profiling our clients and their goals, changing body weight and composition, assessing your clients body composition and the role of metabolism

**Unit III:** - Carbohydrates in sports Nutrition

**Unit IV:** - Role of protein in athletes, muscle gain and fat loss

**Unit V:** - Fats in sports nutrition

**Unit VI:** - Micronutrients – Vitamins and Minerals

**Unit VII:** - Water and electrolyte

### **Text & Reference Books:**

1. Mahan, L. K. and Escott Stump. S. (2008) Krause's Food & Nutrition Therapy 12<sup>th</sup> ed. Saunders-Elsevier
2. Geetanjai Bhide and Subhadra Mandalika (2018). Nutritional Guidelines for Sportspersons 1<sup>st</sup> Edition Jaypee Publications
3. Nancy Clarks (1990) Sports Nutrition Guidebook 5<sup>th</sup> Edition. Human Kinetics Publications
4. K11 Sports Nutrition and supplementation manual Index (2009) K11 Publication

## **BVC-ND 54 Exercise and Fitness Nutrition Project**

## **SEMESTER VI**

### **BVC-ND 61: Basic Research Methodology**

### **BVC-ND 62: Dissertation**

Students can select any one specialization out of the three and have to undergo 3 months internship in the respective fields and projects:

1. Infant and young child feeding,
2. Clinical and therapeutic nutrition,
3. Public and community nutrition.
4. Sports Nutrition

**Syllabus and COs  
for  
B.Voc (Landscape Design)**

**DEEN DAYAL UPADHYAY KAUSHAL KENDRA, DAVV, INDORE**

**B.Voc (Landscape Design)**

**SEMESTER I**

**BVC-LD 11: Business Communication (English)**

**Course Outcomes:**

CO 1: The student will be able to comprehend the importance of verbal and non-verbal communication and also apply the basic principles to communicate effectively.

**Unit I :** Understanding the basic structure used in English Language for formation and comparing it with that of our primary language, understanding and identifying ‘Sense of Sentence’, identifying and defining ‘Subject’ and ‘Verb’, Concept of Verbs and Verb Forms.

**Unit II:** Structures of Present, Past, Continuous and Future Sentence formation with First, Second and Third forms of Verbs, learning usage of Helping Verbs like Has, Have and Had, do, does, did, will, shall etc., knowing Subject-Verb Agreement principles, knowing ‘Subject Modifiers’ and their usage in sentence formation.

**Unit III :** Structures of Sense of Being (SoB) sentences, and for ‘Sense of Possession (SoP)’, knowing the type of sentences, usage of helping verbs like ‘is/am/are/was/were’ etc as Main Verbs for Present, Past, Continuous and Future times senses.

**Unit IV:** Sentence Structures using ‘THERE’ and ‘IT’, constructing sentences denoting the ‘Location’ of the subject with ‘THERE’, handling ‘identified’ and ‘unidentified’ Subjects, constructing sentences with ‘IT’ where ‘Active Subject’ is not available.

**Unit V:** Understanding ‘Sense’ of Grammar in special reference to Primary Language, usage of Pronoun, Articles and Prepositions.

**Unit VI:** Sentence constructions using ‘Modals’ like can, could, should, must, have to, will be able to, should have, must have etc.

**Unit VII:** Communication and English Lab Sessions to reinforce and enhance the effectiveness of Classroom Session.

Section A: These sessions to cover Verb and Verb Form vocabulary, Word vocabulary, ‘Group of Words’ vocabulary, Grammar aspects.

Section B: Elementary Reading, Listening and Writing skills practice and ‘Trade Specific Vocabulary building.

**Text & Reference Books:**

4. Expressions, A language Lbas for English, C. Sumant, Publisher : ‘iGrowth’.
5. SuperFast English and Instant English , Abdul Salam Chaus, Publisher : Salaam Chaus, Jafar Nagar, Masjid Complex, 110, Jafar Nagar, Nagpur.
6. How to Translate into English, Prof. Rajendra Prasad Sinha, Bharti Bhawan, 4271/3, Ansari Road, Dariya Ganj, New Delhi



## **BVC-LD 12: Basic Computer Application**

### **Course Outcomes:**

CO 1: To promote professional excellence in the area of Cargo Logistics Management towards National Prosperity through Sustainable Development.

**Unit I: Fundamentals of Computers:** Identification of various hardware components of a computer system, Architecture and types of Computers. Hardware- Input, Output, Processing, Storage and Networking devices with their working principals. Software - System and Application Software. Computer Languages - Generation of Languages and their Features. Introduction to Information Technology- Data, Information, role of Information System in organization, computer based Information System, latest trends and challenges of information Systems, Information System applications in Air cargo, water Cargo, road and railway cargo, use of RFID and GPS.

**Unit II: Familiarization of various Operating Systems:** WINDOWS: Basic Operations, Utilities and Features (Explorer to manage files). UNIX/LINUX: Introduction, Features and Basic Commands, introduction to mobile operating system – ANDROID and mobile applications. Fundamentals of Networking - types of networks (LAN, WAN, MAN), Network topologies, and Components of Computer Network -Server, Workstation, NIC, Hubs, Switchers, Cables etc. Internet and its use in business – e-commerce, business communication, sending documents, E-mail, www, Searching, Uploading and Downloading from Internet, Hardware and Software requirement of Internet, Search Engines, Browser, Video conferencing. Introduction to mobile communication and mobile computing, Computer Virus, Trojan horse and Worms and their Prevention.

### **Unit III: Application Software (Open Office Automation Software):**

*Word Processing Software-* Word Processing Basics, spell check and grammar, Formatting Text and Documents, Headers, Footers, Tables, Working with Graphics, Templates, printing documents, advance report formatting, Introduction to Mail Merge  
*Presentation Software* - Presentation software Basics, Creating Presentation, slide layouts, working with Text, Graphics, pictures, audio and video in presentation, Slide transition, Custom animation, managing slide shows.

**Unit IV: Spreadsheet Software:** Working with cell and cell Addresses, Inserting and Deleting Cells, rows and columns, cell ranges, Formatting and styles, entering formula, inbuilt simple Functions, Working with multiple sheets, Visual presentation of data using charts, adding Graphics, Table format, sorting and filtering data, Auto fill.

**Unit V:** Advance Features of Spreadsheet Software – logical and text functions, Validation, Conditional formatting, Editing charts, Using Worksheet as Databases, Subtotals, Goal Seek, Solver, Pivot tables, Protection of workbooks, managing large spreadsheets. Case Study: Role of Information Technology for Supply Chain Management. Case Study: Role of internet in logistics and Supply chain management.

### **Text & Reference Books:**

9. Antony Thomas. Information Technology for Office. Pratibha Publications.
10. Gini Courter & Annette Marquis. Ms-Office 2007: BPB Publications.
11. Leon A & Leon M, Introduction to Computers, Vikas Publication.

12. Leon, Fundamentals of Information Technology, Vikas Publication.
13. Kakkar D.N., Goyal R, Computer Applications in Management, New Age.
14. Lucas, Henry C., Information Technology for Management, New Delhi, Tata McGraw-Hill.
15. P.K. Sinha, Computer Fundamentals, New Delhi, BPB Publications Christian Crumlish, ABCs of the Internet, New Delhi, BPB Publications.
16. Das, Sumitabha, Unix Concepts and Applications, New Delhi, Tata McGraw Hill Pub. Co. Ltd.

### **BVC- LD 13: Landscape Material and Construction Technology-I**

#### **Course Outcomes:**

CO 1: Students will be able to differentiate the mechanism involved in plant physiology and growth

CO 2: Modify techniques and materials to demonstrate and understanding of the conceptual and technical aspects of landscape systems, landform, material in landscape architecture, in relation to other diverse practice modes

CO 3: The ability to use resources, materials and technologies to develop responsible and ecologically sound and novel design solution

**Unit I:** Tools and techniques used for gardening.

**Unit II:** basic botany their planting and plotting techniques, and their their maintenance (uses of pesticide types etc.), study of plants – their morphology and anatomy.

**Unit III:** free standing walls, screen walls used in gardens.

**Unit IV:** Types of Boundary walls/fences/screening.

**Unit V:** copings, capping and introduction of bonds.

**Sessional Work-** Assignments sheets should be followed by practical example sheets.

## **BVC-LD 14: History of Landscape Design**

### **Course Outcomes:**

CO 1: Knowledge of landscape architectural history and theory and critical skills to interpret historic ideas, environmental movements and contemporary trends

**Unit I:** Man, Nature & the process of transforming Landscape.

**Unit II:** Development of landscape design & garden till the early 19th century.

**Unit III:** Ancient- Egypt, Rome.

**Unit IV:** Western - Europe, Italy, France, England, Middle East- Persian garden.

**Unit V:** Medieval period in India- Mughal & Rajput Landscape. Detail of all- Ancient trees, shrubs (all types of vegetation, species etc) & transformation.

**Sessional Work** – Students Should be submitted in the form of report, power point, journals etc.

## **BVC-LD 15: Basic Gardening Design**

### **Course Outcomes:**

CO 1: Students will learn to design a landscape project from residential small project to large public projects

CO 2: The ability to develop design strategies that contribute to the improvement of our built and natural environments

**Unit I:** basic free hand lines, circles, composition of shapes

**Unit II:** aesthetic components of design – symmetry, rhythm, etc. Exploration of basic principles proportion, scale, balance, relationship between art and design

**Unit III:** color theory, basic introduction of drawings and their symbols

**Unit IV:** one point and two point perspective

**Unit V:** small exercise for design like play area, canteen design etc

**Sessional Work** – work should be submitted in a2 size sheets, practical examples sheets for every details.

## SEMESTER II

### BVC-LD 21: Computer Aided Design

#### Course Outcomes:

CO 1: To teach users the basic commands and tools necessary for designing and drafting drawings.

**Unit I:** Introduction of cad- Limits, units, coordinate, osnap, open, save, exit, new file, zoom, ortho, print.

**Unit II:** Draw and edit commands-line, circle, ellipse, rectangle, polygon, copy, move, erase, offset, scale, rotate, array, trim, fillet, layer, text etc.

**Unit III:** Dimension, block and hatch-Liner, angular, base line, continue, radius, diameter, center mark all type of dimension, insert block, and hatch

**Unit IV:** 3d modelling- box, cylinder, sphere, cube, etc. extrude, viewport, UCS, object editing etc.

**Unit V:** Rendering-Light, camera, material, render.

### BVC-LD 22: Planting Design

#### Course Outcomes:

CO 1: Student will be able to understand the role of plant material for the improvement of the environment in all aspects.

**Unit I:** Natural design characteristics of plant material and factors influencing choice of plant material for specific design application.

**Unit II:** Plant selection from ecological, hydrology, aesthetic, symbolic and functional point of view.

**Unit III:** Planting for urban and rural roads, paths and open spaces, internal courtyards, selection of plants for inside and outside of residence etc.

**Unit IV:** Planting for wildlife, land rehabilitation, plants growing in and around water bodies.

**Unit V:** Introduction of bio-aesthetic, planting ability to produce accurate and professional quality planting plans.

**Sessional Work** - should be in the form of journal, sketches and supportive material more emphasis should be given on practical examples on all the topics mentioned above.

## **BVC- LD 23: Landscape Material and Construction Technology-II**

### **Course Outcomes:**

CO 1: Students will be able to differentiate the mechanism involved in plant physiology and growth

CO 2: Modify techniques and materials to demonstrate and understanding of the conceptual and technical aspects of landscape systems, landform, material in landscape architecture, in relation to other diverse practice modes

CO 3: The ability to use resources, materials and technologies to develop responsible and ecologically sound and novel design solution

**Unit I:** Different types of vehicular paving and pedestrian paving and their construction details.

**Unit II:** land terrain- contours, grading, cut and fill method, topography survey (technical drawing).

**Unit III:** Detail study of Curbs, Edges, joints, steps and ramps.

**Unit IV:** Construction details of Gates, stiles and walls.

**Unit V:** Landscape material includes all the materials which are used in the above topics for ex-bricks, metal, wood, cement etc.

**Sessional Work** - All the construction details should be submitted in the form of A2 size sheets and theory in the form of journals and other supportive materials.

## **BVC-LD 24: Environmental Studies**

### **Course Outcomes:**

CO 1: The students should be aware of environmental factors and systems so as to understand and maintain eco friendly environment.

**Unit I:** Environment meaning, structure and type of environment, components of environment, society and resources. Man environment relationship: Approach to study man interaction with environment (historical to present day)

**Unit II:** Environmental degradation: Meaning of degradation, types of degradation, process of degradation, cause of degradation, Religious and philosophical factors, deforestation, agricultural development and degradation, population growth and degradation, urbanization and degradation, modern technology and degradation.

**Unit III:** Ecology: Definition of ecology and ecosystem. Types of ecosystem, components of ecosystem, functions of ecosystem, productivity and stability of ecosystem.

Environmental disasters: Meaning and concepts, types of hazards and disaster, man induced and natural hazards, global warming, ozone depletion, greenhouse effect and other major environmental problems.

**Unit IV:** Environmental pollution: Air, water, solid, noise pollution. Meaning, definition, sources, types, adverse effects and methods of control.

**Unit V:** Environmental planning and management: Concepts, aspects and approaches, resources management, ecological management. Biosphere reserves, management of wild life. Environmental regulation and rules, Vision of Environment by govt. of India, Environmental policy, waste disposal rules and laws and legislation enacted by parliament for environmental protection.

**Text Book:**

2. Environmental Awareness : Dr. Dhananjay Verma, Published by : Madhya Pradesh Hindi Granth Academy.

**BVC- LD 25: Design Studio -I**

**Course Outcomes:**

CO 1: Students will learn to design a landscape project from residential small project to large public projects.

CO 2: The ability to develop design strategies that contribute to the improvement of our built and natural environments

**Contents** - The students will be introduced to VERNACULAR landscape design for Residential Garden area, they have to study in depth site analysis, site planning etc

**Sessional Work** - students will produce and present their work in the form of sheets, reports and Models

## SEMESTER III

### BVC-LD 31: Life Skills Management

#### Course Outcomes:

- CO 1: Handle Stressful Situations
- CO 2: Understand their priorities
- CO 3: Cope with different Psychological Problems
- CO 4: Find Real Happiness

**UNIT I: Basics of Life Skills Management:** Understanding Self and Psychological Problems: Life Skills Management: Concepts and Applications, Basics of Brain-Structure, Hormones: Role of Hormones in changing mood and emotions, Role of genes, Understanding Memory. Normal Self: Concept of Normality. Characteristics of Healthy Personality, Levels of Personality Dysfunctions, Ways to offset depression. Anxiety: Symptoms and Dealing with anxiety. Managing Anger, and Right attitude towards competition. Understanding the reasons behind OCD and.

**Unit II: Managing Habits:** Neurology of Habits, Developing Discipline in creating new habits, will-power, Causes of Addictions, Changing destructive habits, Habits of highly effective people. Relaxation Techniques: Meditation, Effects of Meditation. Positive Attitude towards oneself, Equanimity in oneself, Happiness – a state of mind and related techniques.

**Unit III: Relationship Management:** Emotional Intelligence: Core Domain: Self Awareness, Self-Regulation, Social Awareness and Relationship Management. Relationship Management: Four Criteria for Effective Relationship Management, Competencies in the Relationship Management. Ability to size-up situations, Role of Empathy Basics of Interpersonal Communication: Understanding and Observing Non-Verbal Behavior, Listening skills. Profiling Personal Environments. Understanding the types of Personality & their Motivating-Factors. Concepts of healthy relationships.

**Unit IV: Stress Management:** Understanding the Physiology of Stress, Symptoms of Stress. Stress and Performance, effects of Stress on Learning, Oversensitivity, Focus and Concentration, Techniques of Stress Management. Concepts of Crisis Management, Dealing with Peer Pressure and Complexes, Assertiveness Training, Avoiding Groupthink, Dealing with distractions.

**Unit V: Mental Health and Wellness:** Concept of Wellness: Measures to improve Wellness. Sleeping and Mind, Yoga and Exercise, Concepts of Balanced Diet, Importance of Recreational Practice, Role of art in wellness, How imagination shapes our Mind-Set. Wellness Programs for Professionals.

## **BVC–LD 32: Landscape Services**

### **Course Outcomes:**

CO 1: It will help to learn about the basic function to operate the sites like soil, water and drainages etc.

**Unit I:** Soils- properties of soil, its uses and management, soil degradation control, remedial action and techniques.

**Unit II:** Hydrology its cycle and sources of surface water, rainfall regime, types of flow channel, water supply sources and different techniques used in gardens.

**Unit III:** Drainage sources of ground water pollution and its control, types of drainage systems, characteristic and management of drainage basins, drainage system used in landscape sites.

**Unit IV:** Landscape simulation and site utilities basic planning and understanding of principles, external lighting types of fixtures and their use in varying situation.

**Unit V:** Street furniture and site furnishing

**Sessional Work** – All units will follow with practical site examples and survey reports.

## **BVC-LD 33: Landscape Materials and Construction Technology-III**

### **Course Outcomes:**

CO 1: Students will be able to differentiate the mechanism involved in plant physiology and growth.

CO 2: Modify techniques and materials to demonstrate and understanding of the conceptual and technical aspects of landscape systems, landform, material in landscape architecture, in relation to other diverse practice modes.

CO 3: The ability to use resources, materials and technologies to develop responsible and ecologically sound and novel design solution.

**Unit I:** Construction of retaining walls, edgings of natural & manmade water bodies

**Unit II:** Construction detail of small landscape structure & street furniture, plant boxes

**Unit III:** Hardscape materials use in landscape design – seats, lamp post, benches, manmade materials, etc

**Unit IV:** Construction techniques of water bodies- Ponds, Swimming pools etc

**Unit V:** Mud, clay, stone, bricks, timber, glass, metals, gravel, pebbles, lime, sand, cement, concrete, RCC, Vitrified tiles / all patterns, Terracotta. Market survey for materials & products

**Sessional Work** - All the construction details should be submitted in the form of A2 size sheets and theory in the form of journals and other supportive materials.



## **BVC-LD 34: Landscape Surveying**

### **Course Outcomes:**

CO 1: Students will learn the uses of all the instruments and techniques used for site measurements.

**Unit I:** Introduction and uses of all the instruments used in landscape sites

**Unit II:** Landscape site survey and appraisal - topographic survey and their methodology, visualizing landforms.

**Unit III:** Understanding contours and their characteristics, graphical representation, deriving contours interpolation (intro).

**Unit IV:** Earth form grading- symbolic annotations, basic grading principles, grading terraces, basics of road alignment (horizontal and vertical)

**Unit V:** Mapping and sensing, remote sensing system, computation of volume, application of remote sensing, satellites imaginaries (all the new techniques used in landscaping sites)

**Sessional Work** - Students will produce and present their work in the form of sheets and reports showing practical use of all the above method on different landscape sites.

## **BVC-LD 35: Design Studio –II**

### **Course Outcomes:**

CO 1: Students will learn to design a landscape project from residential small project to large public projects.

CO 2: The ability to develop design strategies that contribute to the improvement of our built and natural environments.

CO 3: Students will also learn to develop the technical drawings into the presentation drawing with all the detail of materials through the software of Photoshop.

**Unit I:** Introduction of different REGIONAL landscape design for small public areas, they have to study in depth site analysis, site planning and new solutions for topics like zoo area, college campus; sites can be taken from different climatic zones like Rajasthan, Shimla etc.

**Unit II:** Introduction of Photoshop Crop, paint, color, edit, open, save, exit, new file, zoom, text, print, select.

**Unit III:** Draw and edit commands-Line, circle, ellipse, rectangle, polygon, copy, move, erase, scale, rotate, trim, pen tool etc

**Unit IV:** Working with layers- Duplicate layer, copy layer, insert layer. Photo retouching Color, resize, edit, color correction, editing etc.

**Unit V:** Print special effects like -mosaic effect, bridal effect, image in text, change background, black and white, clone effect, passport size, create certificate, exporting your work.

**Sessional Work** - Students will produce and present their work in the form of sheets, reports and Models.

## **SEMESTER IV**

### **BVC-LD 41: Energy Efficient Landscape**

**Objective:** To give an opportunity to students to study energy efficient landscapes in detail to enhance its application in landscape design process.

**Unit I:** Energy Efficiency – meaning and definition. Need for adopting energy efficient landscape design techniques, rating systems, application at various scales (solar energy, wind energy)

**Unit II:** Passive design strategies, vegetation and microclimate: plants and their impact on environment

**Unit III:** Water conserving landscape design (xeriscaping), conservation of energy through landscape, human thermal comfort in outdoor spaces, humidity and precipitation modification.

**Unit IV:** Introduction of energy conservation, green building design, and sustainable gardening

**Unit V:** Case studies and examples of energy efficient landscapes practices globally and locally

**Sessional Work** - Should be submitted in the form of A2 size sheets and theory in the form of journals and other supportive materials.

## **BVC-LD 42: Estimation and Costing**

**Objective:** Students will learn to define as the process of determining the probable cost of the product before the actual manufacture starts.

**Unit I:** Introduction and types of estimates and their uses.

**Unit II:** Analysis of rates - market survey (landscape material costing).

**Unit III:** Specification and procedure for landscape works.

**Unit IV:** Preparation of detailed and abstract landscape estimate from drawings, Calculation of quantities of materials used in landscape sites.

**Unit V:** Detailed study of government schedule of rates.

**Sessional Work** - Students will produce and present their work in the form of sheets and reports showing practical use of all the above method on different landscape sites.

## **BVC-LD 43: Landscape Material & Construction Technology-IV**

**Objective:** Modify techniques and materials to demonstrate and understanding of the conceptual and technical aspects of landscape systems, landform, material in landscape architecture, in relation to other diverse practice modes. The ability to use resources, materials and technologies to develop responsible and ecologically sound and novel design solution.

**Unit I:** Garden structure – gazebos, tree deck, wooden structures, roof top gardens. Water proofing (theory).

**Unit II:** Different Construction techniques of roof landscaping.

**Unit III:** Parking design standards and circulation (theory), parking layout design guidelines space dimension, accessible parking's.

**Unit IV:** Treatment for disturbed landscapes like quarries, degraded wastelands, over exploited waterfronts etc.

**Unit V:** New modern techniques used in planting design, waste water management (harvesting, grey water treatment). Fire safety, Irrigation and Security system etc.

**Sessional Work** - all the construction details should be submitted in the form of A2 size sheets and theory in the form of journals and other supportive materials.

### **BVC-LD 44: Landscape Working Drawing**

**Objective:** Students will learn how to provide dimensioned, graphical information that can be used by a contractor to construct the works or by suppliers to fabricate components of the works or to assemble or install components.

**Unit I:** Working drawing of residential project.

**Unit II:** Study of different *landscaping* materials, and their uses, *construction* details.

**Unit III:** *Drawing, working detail*, finished models, mockups, details.

**Sessional Work** - Students will produce and present their work in the form of sheets.

### **BVC-LD 45: Design Studio-III**

**Objective:** Studio work deals with understanding or resolving of basic landscape design issues and elements through study of case studies of existing landscape design.

**Content:** Study about commercial space design considering all the details of energy efficient garden and the historical context of the city.

**Sessional Work** - Students will produce and present their work in the form of sheets, reports and Models

## SEMESTER V

### **BVC-LD 51: Landscape Conservation**

**Objective:** To understand the importance of landscape conservation and various approaches.

**Unit I:** Conservation in Indian context (historic conservation).

**Unit II:** Environmental conservation, Conservation of historic landscapes.

**Unit III:** Landscape conservation and its significance (natural resources such as soil, water, vegetation etc).

**Unit IV:** Non-Conventional energy resources used in designed Landscapes.

**Unit V:** National and International policies related to landscape conservation areas such as forests, national parks, protected landscapes, bio-reserves etc.

**Sessional Work** - Assignment will be in the form of a journal along with individual study and / or design project/s which are presented in the form of presentation and a written report of the same. The project will also include design solution for the disturbed landscapes or site needing conservation. This will be submitted in the form of sheets.

### **BVC-LD 52: Professional Practice**

**Objective:** To give an opportunity for learning and for development of skills related to practical aspects of the discipline of Landscape Architecture, by working in a professional firm.

**Unit I:** Ethics, code of conduct and liabilities as a landscape designer, contracts and tenders (types of contracts, etc.), execution procedures.

**Unit II:** By laws, role of statutory bodies at city level.

**Unit III:** Office organization procedure.

**Unit IV:** Relationship of landscape designer with clients.

**Unit V:** Landscape specification writing.

**Sessional Work** - Students will produce and present their work in the form of journals and reports.

## **BVC-LD 53: Project Management**

**Objective:** To understand landscape management principles and concepts with respect to natural and manmade contexts.

**Unit I:** Landscape management principles.

**Unit II:** Management concepts related to

1. Designed landscapes
2. Urban open space
3. Sub-urban and rural landscapes
4. Natural landscapes such as forests, streams etc.
5. Historic and protected landscapes

**Unit III:** Understanding Landscape Management Framework

**Unit IV:** Understanding management of landscape projects under execution and after execution

**Sessional Work** - Assignment will be in the form of notes/ assignments covering all the topics mentioned above with suitable examples, sketches and supportive material.

## **BVC-LD 54: Dissertation**

**Objective:** Each student is required to prepare an independent study with reference to a special subject in consultation with the faculty members. The opportunity for students to explore a practical or conceptual project / subject to evolve a sound methodology and solution. The project can focus on landscape planning, landscape design or any in-depth research work in same or allied fields related to landscape design.

**Contents:**

- Research methodology, case study, design.
- Research on a selected topic, case study and solution.
- Student is required to prepare an independent study of a special topic consulting the faculty or guide
- Viva.

**Sessional Work** – The work will be in the form of necessary drawings to explain the project and its details. A comprehensive report of the project will be submitted which will include the above drawings.

### **BVC-LD 55: Design Studio –IV**

**Objective:** To understand the complex issues related to landscape architecture including site planning, urban landscaping and to develop the concept of landscape development as an interacting process between natural, man-made and social environment.

- Urban space design –to design urban space considering the complex, historical, contemporary and ecological context of city.
- Designing public spaces.

**Sessional Work** - Students will produce and present their work in the form of sheets, reports and Models

## **SEMESTER VI**

### **BVC-LD 61: Internship Training**

**Objective:** To give an opportunity to work in an office and give the student an exposure to real time challenges and situations of the profession.

**NOTE:** 100 days internship under respective landscape designer or architect Portfolio and viva.

**Sessional Work** - A log book consisting of details of work done during the professional training which would be duly stamped and signed by the Principal authority of the office / firm.

**Syllabus and COs  
for  
Diploma in Logistics & Supply  
(Cargo Management)**



**Diploma in Logistics and Supply (Cargo Management)**  
**SEMESTER I**

**DLS (CM) 11: Business Communication (English) (BCE)**

**Course Outcomes:**

CO 1: The student will be able to comprehend the importance of verbal and non-verbal communication and also apply the basic principles to communicate effectively.

**Unit I:** Understanding the basic structure used in English Language for formation and comparing it with that of our primary language, understanding and identifying 'Sense of Sentence', identifying and defining 'Subject' and 'Verb', Concept of Verbs and Verb Forms.

**Unit II:** Structures of Present, Past, Continuous and Future Sentence formation with First, Second and Third forms of Verbs, learning usage of Helping Verbs like Has, Have and Had, do, does, did, will, shall etc., knowing Subject-Verb Agreement principles, knowing 'Subject Modifiers' and their usage in sentence formation

**Unit III:** Structures of Sense of Being (SoB) sentences, and for 'Sense of Possession (SoP)', knowing the type of sentences, usage of helping verbs like 'is/am/are/was/were' etc as Main Verbs for Present, Past, Continuous and Future times senses

**Unit IV:** Sentence Structures using 'THERE' and 'IT', constructing sentences denoting the 'Location' of the subject with 'THERE', handling 'identified' and 'unidentified' Subjects, constructing sentences with 'IT' where 'Active Subject' is not available.

**Unit V:** Understanding 'Sense' of Grammar in special reference to Primary Language, usage of Pronoun, Articles and Prepositions

**Unit VI:** Sentence constructions using 'Modals' like can, could, should, must, have to, will be able to, should have, must have etc.

**Unit VII:** Communication and English Lab Sessions to reinforce and enhance the effectiveness of Classroom Session.

Section A : These sessions to cover Verb and Verb Form vocabulary, Word vocabulary, 'Group of Words' vocabulary, Grammar aspects

Section B : Elementary Reading, Listening and Writing skills practice and 'Trade Specific Vocabulary building'

**Text & Reference Books:**

1. Expressions, A language Labs for English, C. Sumant, Publisher : 'iGrowth'.
2. SuperFast English and Instant English , Abdul Salam Chaus, Publisher : Salaam Chaus, Jafar Nagar, Masjid Complex, 110, Jafar Nagar, Nagpur.
3. How to Translate into English, Prof. Rajendra Prasad Sinha, Bharti Bhawan, 4271/3, Ansari Road, Dariya Ganj, New Delhi.

## **DLS (CM) 12: Basic Computer Application**

### **Course Outcomes:**

CO 1: To promote professional excellence in the area of Cargo Logistics Management towards National Prosperity through Sustainable Development.

**Unit I: Fundamentals of Computers** - Identification of various hardware components of a computer system, Architecture and types of Computers. Hardware- Input, Output, Processing, Storage and Networking devices with their working principals. Software - System and Application Software. Computer Languages - Generation of Languages and their Features. Introduction to Information Technology- Data, Information, role of Information System in organization, computer based Information System, latest trends and challenges of information Systems, Information System applications in Air cargo, water Cargo, road and railway cargo, use of RFID and GPS.

**Unit II: Familiarization of various Operating Systems** - WINDOWS: Basic Operations, Utilities and Features (Explorer to manage files). UNIX/LINUX: Introduction, Features and Basic Commands, introduction to mobile operating system – ANDROID and mobile applications. Fundamentals of Networking - types of networks (LAN, WAN, MAN), Network topologies, and Components of Computer Network -Server, Workstation, NIC, Hubs, Switchers, Cables etc. Internet and its use in business – e-commerce, business communication, sending documents, E-mail, www, Searching, Uploading and Downloading from Internet, Hardware and Software requirement of Internet, Search Engines, Browser, Video conferencing.

Introduction to mobile communication and mobile computing, Computer Virus, Trojan horse and Worms and their Prevention

**Unit III: Application Software (Open Office Automation Software)** - *Word Processing Software*- Word Processing Basics, spell check and grammar, Formatting Text and Documents, Headers, Footers, Tables, Working with Graphics, Templates, printing documents, advance report formatting, Introduction to Mail Merge

*Presentation Software* - Presentation software Basics, Creating Presentation, slide layouts, working with Text, Graphics, pictures, audio and video in presentation, Slide transition, Custom animation, managing slide shows

**Unit IV: Spreadsheet Software** - Working with cell and cell Addresses, Inserting and Deleting Cells, rows and columns, cell ranges, Formatting and styles, entering formula, inbuilt simple Functions, Working with multiple sheets, Visual presentation of data using charts, adding Graphics, Table format, sorting and filtering data, Auto fill

**Unit V:** Advance Features of Spreadsheet Software – logical and text functions, Validation, Conditional formatting, Editing charts, Using Worksheet as Databases, Subtotals, Goal Seek, Solver, Pivot tables, Protection of workbooks, managing large spreadsheets.

Case Study: Role of Information Technology for Supply Chain Management

Case Study: Role of internet in logistics and Supply chain management

**Text & Reference Books:**

1. Antony Thomas. Information Technology for Office. Pratibha Publications.
2. Gini Courter & Annette Marquis. Ms-Office 2007: BPB Publications.
3. Leon A & Leon M, Introduction to Computers, Vikas Publication.
4. Leon, Fundamentals of Information Technology, Vikas Publication.
5. Kakkar D.N., Goyal R, Computer Applications in Management, New Age.
6. Lucas, Henry C., Information Technology for Management, New Delhi, Tata McGraw-Hill.
7. P.K. Sinha, Computer Fundamentals, New Delhi, BPB Publications  
Christian Crumlish, ABCs of the Internet, New Delhi, BPB Publications.
8. Das, Sumitabha, Unix Concepts and Applications, New Delhi, Tata McGraw Hill Pub. Co. Ltd.

**DLS (CM) 13: Logistics & Supply Chain Management**

**Course Outcomes:**

CO 1: Students will be able to understand fundamentals of supply chain management concepts along with its application to evaluate and manage an effective supply chain.

CO 2: Also, students will understand the fundamental role of logistics to transportation and warehousing.

**Unit I:** Logistics Management: Origin & Definition, Concepts of Logistics, Types of Logistics, Logistics management, ware house nature management, concepts in Logistics distribution.

**Unit II:** Routing & Transportation Management, Some Commercial Aspects in Distribution Management, Codification, Distribution Channel Management, Distribution Resource Planning (DRP), Logistics in 21<sup>ST</sup> Century.

**Unit III:** Supply Chain Management: Introduction & Development, Nature & Concepts, importance of Supply Chain in business, Value Chain, Components of Supply Chain, The Need for Supply Chain, Understanding the Supply Chain Management, Participants in SCM, Global Importance.

**Unit IV:** Role of a manager In Supply Chain, Supply Chain Improvement, Inter-relation between enablers and levels of Supply Chain Improvement.

**Unit V:** Aligning the supply chain with business strategy, SCOR Model, SCM Relationships & Conflict Management in Business.

**Text & References Books:**

1. Essentials of Supply Chain Management, Michael H. Hugos.
2. Logistics and Supply Chain Management, Martin Christopher.
3. Designing and Managing the Supply Chain, David Simchi-Levi, Philip Kaminsky and Edith Simchi-Levi.
4. Purchasing and Supply Chain Management, Robert Monczka, Robert Handfield, Larry Giunipero and James Patterson.
5. Logistics Management and Strategy: Competing through the Supply Chain, Alan Harrison and Remko Van Hoek.
6. Manufacturing Planning and Control for Supply Chain Management, F. Robert Jacobs, William Berry, D. Clay Whybark and Thomas Vollmann.
7. Purchasing and Supply Chain Management: Analysis, Strategy, Planning and Practice, Arjan J. Van Weele.
8. Strategic Supply Chain Management: The Five Core Disciplines for Top Performance,  
Shoshanah Cohen and Joseph Roussel. Supply Chain Logistics Management by Donald Bowersox, David Closs and M. Bixby Cooper.
9. Supply Chain Management: Strategy, Planning, and Operation, Sunil Chopra and Peter Meindl.
10. Textbook of Logistics and Supply Chain Management, D. K. Agrawal.

**DLS (CM) 14: Materials Management**

**Course Outcomes:**

CO 1: It will help the students understand the basic principles related to materials used in a manufacturing facility.

CO 2: This also include purchase of materials, storage and handling and inventory management. CO 3: Other concepts include vendor selection, purchase budgeting and stores management.

**Unit I:** Introduction of Materials Management : Objective of Materials Management, Importance & Integrated approach of Materials Management, Materials Management Information System(MMIS), Materials Management Organizations.

**Unit II:** Material Planinig & Control : Introduction to Materials Management ,factors affecting & techniques of Materials planning, material budgeting, material control, material control cycle.

**Unit III:** Purchasing Management : Importance and Objectives of Purchasing, Functions of Purchasing Department, Purchase organization, Purchase Cycle, Purchasing Policies, Make-or-Buy, Role of Purchasing Manager, Speculative Buying, Vendor Rating, Rating Techniques, Value Analysis.

**Unit IV:** Stores Management and Materials Handling: Nature of Stores, Stores layout, Stock Verification, Classification and Codification.

Organization for Materials Handling, Factors affecting the selection of Materials Handling Equipment, Types of Materials Handling Systems, Selection and Design of Handling System, Types of Materials Handling Equipment, Materials Handling and Plant Layout, Evaluation of Materials Handling Performance, Safety in Materials Handling.

**Unit V:** Inventory Management: Meaning, Definition and Objectives of Inventories, Inventory Costs, Process of Inventory Management and Control, Fixed Order Quantity System (Q - System), Fixed Order Period System (P - System), Inventory Control Techniques – ABC Analysis, Measurement of Effectiveness of Inventory Management.

**Text & Reference Books:**

1. Introduction To Materials Management, A. K. Chitale.
2. Production and Operations Management, Ashwathapa.

**DLS (CM) 15: Minor Industry Project (BCE+LS+MM)**

**SEMESTER II**

**DLS-CM 21: Basics of Accounting**

**Course Contents:**

CO 1: The students should be able to understand the basic principles of accounting.

CO 2: Hands-on-training on TALLY will be helpful for implementation of these principles in real time applications.

**UNIT I:** Introduction: Introduction and Purpose of Accounting, uses of Accounting Information & Basic Accounting Concepts.

**UNIT II:** Accounting Structure: Process of Accounting, Journal, Ledger & Trial Balance based on double entry book keeping.

**UNIT III:** Practical System of Accounting: Cash Book, Sales & Purchase of goods. Bill of exchange, Bank Reconciliation Statements.

**UNIT IV:** Preparation of Financial Statements: Income Statements, (Profit and Loss A/C), Statement of Financial Position (Balance Sheet) and Adjustments (only Closing Stock, Prepaid, Outstanding, Unearned & Accrued), Valuation of Assests and Depreciation methods.

**UNIT V:** On the basis of Specialization: Case Study

## **PRACTICALS**

- Exploration of features of TALLY software.
- To create & design various types of documents related to accounting such as Cash Book, Sales & Purchase of goods. Bill of exchange etc.

### **Reference Book:**

1. T. S. Grewal, Introduction to accountancy, S. Chand & co. Ltd.

## **DLS (CM) 22: Corporate Business Communication**

### **Course Outcomes:**

CO 1: To consistently impart advanced professional knowledge and thus improve the skills in the area of Cargo and Logistics Management functions.

**Unit I-** Business Communication: Concept, nature, definitions, features, importance, processes, models and functions of Business Communication. Objective, types, dimensions, channels, pattern and barriers of effective communication.

**Unit II-** Media of Corporate Business Communication (Written and body language): verbal, nonverbal, listening skills, Johri Window, Corporate communication and image management, Kinesics (15%) Physical Appearance, Postures, Gestures, Dress Code for Formal and Informal occasions. (Postures and Gestures should include Hand and Legs movement, whole body movement-Sitting, standing, walking style, Facial expressions etc.) Tools of Corporate communication, process of corporate communication.

**Unit III-** Corporate Business Correspondence : Design of stationary, feature writing and production of House journal/Newsletter, Layout, Business report writing, Notices, Minutes of the Meeting, Press releases, Handouts, Circulars and memo report, applications for employment and goodwill letters, Public Speaking(Elocution/Extempore/Welcome speech/Vote of Thanks/Presentation-with and without use of Audio visual aids)

**Unit IV-** Corporate Business Presentations : Business Report presentations, public speaking, how to participate in radio talk and panel discussion on factory site, Professional use of telephone, mobiles, Grapevine, face to face, Negotiation, Formal and Informal etc. Recent developments in modes of Corporate Business Presentations like internet, video conferencing etc.

**Unit V-** Self Development : Development positive attitude, Self Motivation, Time Management, Stress Management, Self Discipline, Meditation with Nature/oneself, factory and modern business manners.

**Note:** Respective subject faculty should ensure that theory is put into practice by implementing exercises based on hypothetical situations. For e.g.: By giving hypothetical situations students should be asked to write down minutes of the meeting, job applications, letter writing, agenda, press notes, etc. for better understanding. The concerned faculty should stress the importance of positive attitude that can be reflected through verbal and non verbal communication (e.g : Constructing positive phrases .)

## **Books Recommended:**

1. Business Communications for managers by Payal Mehra, Pearson Education.
2. Business Communications for Today by Courtland L .Bovee & John V.Thill, Pearson Education.
3. Business Communications (Thomson), seventh Edition by Krizan, Merrier, Logan & Williams.

## **DLS (CM) 23: Principles and Practices of Supply Chain**

### **Course Outcomes:**

CO 1: Students will be able to understand fundamentals of supply chain management concepts along with its application to evaluate and manage an effective supply chain.

**Unit I-** Introduction-What is Management, Definition of management, Functions of Management, Principles & Practices of Supply Chain Management, Is management Art or Science? Case study: “Naughty Rule”. Leadership- Tasks of Leaders, Meaning, Approaches. Case study: “ Unfair treatment” Coordination & Control Concept, Nature, Types, Methods of Coordination, Management Control, Types, Principles, Techniques of Controlling.

Case study: “Patel Mills”.

**Unit II- Understanding Principles & Practices of Logistics & Supply:** Twenty first century logistics & supply chains, the supply chain revolution – generalized supply chain model – supply chain and networks logistics: the logistics of business - the logistical value proposition- the work of logistics-logistical operating arrangements - flexible structure – Supply Chain Synchronization. Case-Stud: India’s Generic Drugs and Consumer Surplus.

**Unit III- Order Processing & Information System :** The Customer order cycle, order management system, customer relationship management, Customer Focused Marketing - Customer Services Customer Satisfaction , Procurement And Manufacturing: The Quality Imperative- Procurement – Manufacturing-Logistical Interfaces, Information Technology Framework: Information System Functionality - Supply Chain Information System Design, Global Supply Chain Integration-Supply Chain Security. Case-Study: BioPharma, Inc.

**Unit IV- Advance Purchasing & Material Operations:** Overview of Purchasing & Material Management, Nature of Organizations & its types, Conflict in Purchasing among vendor parties, Ethical Concepts in Purchase. Make or Buy or Outsourcing and Vendor Analysis, Price and Pricing Impact on purchase, Purchasing Cycle and Contracts / Purchase Orders, Negotiations, Application of Computers in Purchasing. Types of material handling equipment: Importance of material handling equipment’s & Study of safety procedure for material handling devices.

Case Study: ONGC Ltd.

**Unit V- Material Relationship Development and Management:** Functionality, Principles and Participants Transportation Service, Warehousing Ownership Arrangements and security, Material Requirement Planning Systems (MRP): Meaning, purpose and advantage of MRP, Data Requirements and Management –Bill of Materials, Master Production Schedules, process of MRP, output of MRP. Materials Management in JIT Environment: Zero inventory concept, Excess Inventory: A Roadblock to World-Class Manufacturing, Materials management in JIT environment, Vendor Managed Inventory, vendor relationship in JIT context.

Case Study: Case Study: Specialty packaging corporation

**Books Recommended:**

1. Foundations of Inventory Management – Zipkin, McGraw Hill.
2. Orliky's MRP – Plossl
3. Production Planning And Inventory Control - Seetharama L Narsimhan, Dennis W McLeavy, Peter J Billington, Prentice Hall Of India Pvt Ltd.
4. Introduction To Materials Management, - J. R. Tony Arnold, Stephen N. Chapman - Prentice Hall
5. Principles of Inventory and Materials Management - Richard J. Tersine, Prentice Hall PTR
6. Essentials of Inventory Management - Max Muller, AMACOM/American Management Association
7. Production And Inventory Control - J H Greene, Homewood III: Richard D Irwin
8. World Class Supply Management - Burt, Dobbler, Starling , TMGH, 7th ed.
9. Global operations & Logistics- Philippe - Pierre Dornier, John Wiley & sons Inc, New York, 2002.
10. Supply Chain Management – Sunil Chopra, Peter Meindl, Dharam Virkalra- Pearson Education in South Asia.
11. CRM Concepts & Cases By Alok Kumar Rai PHI Learning Private LTD., Delhi, 2013.
12. Harold Koontz, O'Donnell and Heinz Weihrich, "Essentials of Management", New Delhi, Tata McGraw Hill, 1992.
13. R.D.Agrawal," Organization and Management", New Delhi, Tata McGraw Hill,1995.



## **DLS (CM) 24: Case Studies in Logistics & Supply**

### **Course Outcomes:**

CO 1: Case studies in logistics and supply chain will provide knowledge about current scenario of various industries of India as well as situated in other countries also.

**Unit I- General Duties & Store Records-** Introduction to safety measures-personal, general and store room, procedure of custody & keys, Knowledge about first aids & firefighting equipment. Introduction to Stores, Store layout and its types , Centralized and Decentralized Stores and its Advantages and Disadvantages, roles and responsibilities of a store manager importance of Maintenance & Care of material on site/store and related safety precaution of material and its bylaws. Case Study Presentation.

**Unit II- Inventory and Warehouse Operations-** Basic of Inventory& Warehouse concept; need for inventory; types of inventory, functions, use; Dependent and Independent Demand II, Strategic Inventory Management: Objectives and Importance of the inventory management function in reference to Profitability, Strategy, customer satisfaction and Competitive Advantage. Strategic Warehousing-Warehousing Operations-Warehousing Ownership Arrangements- Warehouse Decisions. Case Study Presentation.

**Unit III- Logistics & Supply Chain Drivers-** Impellers of Logistics & Supply Chain, Financial Measures of performance, drivers of supply chain performance, framework for structuring drivers, inventory, facilities, transportation management system, warehouse management system, Logistics & Supply Chain information system and e-commerce.

Case Study Presentation.

**Unit IV- Designing the network of Logistics & Supply-** Role of distribution in the logistics & supply chain, factors influencing distribution network design decisions, framework for network design decisions, Indian FMCH Sector- Distribution Channels, Indian Commodities Distribution Channels.

Case Study Presentation.

**Unit V- Planning and Coordination-** Role of Forecasting in Supply Chain, Characteristics & Component of demand forecasting, aggregate planning in logistics & supply chain, sales and operations planning, managing supply , managing demand, implementing sales and operations, Bullwhip effect, coordination in supply chain.Global v/s Domestic SCM, logistics & supply chain challenges for the future.

Case Study Presentation.

**Unit VI- Material Management and CRM Approach-** Material Requirement Planning Systems (MRP), Materials management via JIT approach, stages of material operations in factory site and other factory outlets, material relationship in business, CRM concepts and practices, CRM success factors, CRM process/cycle(business and working hours) & CRM Value chain, Stakeholders in CRM. Case Study Presentation.

**Books Recommended:**

1. Supply Chain Logistics Management - Bowersox, Closs & Cooper – McGrawHill, 2nd Indian ed.
2. World Class Supply Management - Burt, Dobbler, Starling , TMGH, 7th ed.
3. Global operations & Logistics- Philippe - Pierre Dornier, John Wiley & sons Inc, New York, 2002.
4. Designing and Managing the supply chain - David Simchi, Levi & Philip Kaminsk, McGraw-Hill Companies Inc., 2000.
5. Supply Chain Management – Sunil Chopra, Peter Meindl, Dharam Virkalra- Pearson Education in South Asia.
6. CRM Concepts & Cases By Alok Kumar Rai PHI Learning Private LTD., Delhi, 2013.

**DLS (CM) 25: Major Industry Project**

The students will be involved fully for training and working in the project with some related industry. Also, the students are required to present their work done time to time as per the instructions given by the Course Coordinator.