



Shri Vaishnav Vidyapeeth Vishwavidyalaya, Indore

DUAL DEGREE PROGRAM (B.Sc-M.Sc. Food and Nutrition)

B. Sc. Food and Nutrition Sem I (2020-2021)

Subject Code	Category	Subject Name	Teaching and Evaluation Scheme								
			Theory			Practical		Th	T	P	CREDITS
			End Sem University Exam	Two Term Exam	Teachers Assessment	End Sem University Exam	Teachers Assessment				
FSN 101	I	Food Science I	60	20	20	0	0	4	0	0	4

Abbreviation		Teacher Assessment (Theory) based on following components: Quiz / Assignment / Project / Participation in class (Given that no component shall exceed 10 Marks).
Th	Theory	
T	Tutorial	Teacher Assessment (Practical) based on following components: Viva/ File/ Participation in Lab work (Given that no component shall exceed 50% of Marks).
P	Practical	

Course Objective

To impart knowledge pertaining to different food groups, nutritive value and importance in daily diet.

Course Outcome

- Student should be able to differentiate between the food and its groups.
- Student should be able to tell the nutritional importance of different food groups.

FSN 101: Food Science I

UNIT I: Concept of Food science and its application- Definitions of Food, Nutrition, Nutrients, Macronutrients, Micronutrients, Food Groups, Classification of foods, Food technology and future foods- Biofortification, Nutraceuticals, Organic foods.

UNIT II: Cereals and Pulses – composition and nutritive value of wheat, rice, their milling and processing ,storage, use in various preparations, breakfast cereals, millets like corn, jowar, ragi, bajra, cereal cookery.

Pulses and legumes- nutritive value, processing, storage, toxic constituents, pulse cookery, variety.

UNIT III: Milk and milk products- composition, nutritive value, effect of heat, acid and enzymes, processing, storage, milk products (cheese, paneer, ice cream, ghee, butter, flavoured milk, imitation milk).



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UNIT IV: Sugar and related products- nutritive value, properties, sugar related products, stages in sugar cookery, artificial sweeteners.

UNIT V: Water in foods - Introduction, Physical properties of water, Structure of water molecule, Types of water, Freezing and ice structure, Water activity, Water activity and food spoilage, Water activity and food packaging, Water activity and food processing.

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FSNP 105	I	Food Science I-Practical	0	0	0	30	20	0	0	4	2

FSNP 105 : Practicals:

- Market survey of locally available food items viz. cereals, pulses, fruits, vegetables, milk and milk products, fats and oils, nuts and oilseeds, sugar and jaggery, meat, fish, and poultry and miscellaneous food items like biscuits, jams, jellies, ketchup etc.
- Introduction to different culinary terms
- To study germination of whole pulses and legumes.
- To study fermentation in cereals and pulses.
- To study non-enzymatic browning; caramelization in various sugars.
- To detect the presence of adulterants in milk.

Reference Books:

- Food Science by B. Srilakshmi, publishing, New Age International (P) ltd. publications.
- Food Science by N.N. Potter, CBS publishing.
- Food Science by S. Manay, New Age International (P) ltd. publications.
- Mudambi S R (1985). Fundamentals of Foods & Nutrition, Wiley Eastern Ltd., New Delhi.



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FSN 102	I	Introduction to Human Nutrition	60	20	20	0	0	4	0	0	4

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P	Practical	

Course Objective

To understand the functions of food, energy metabolism, the role of various nutrients, their requirements and the effect of deficiency and excess.

Course Outcome

The student should be able to figure out different deficiencies related to less nutrition.

FSN 102: Introduction to Human Nutrition

UNIT I: Introduction to human nutrition- Macronutrients and micronutrients- Classification and functions, Digestion, absorption and assimilation of nutrients.

UNIT II: Energy metabolism- Components of energy expenditure, Basal Metabolic Requirements and Activity, Recommended Dietary Allowances, Concept of a balanced diet, Methods of evaluation of nutritive value of foods.

UNIT III: a) Carbohydrates- Types, functions, sources, requirement, storage, Effect of deficiency and excess. b) Proteins- Types, functions, sources, requirement, storage, Effect of deficiency and excess.



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UNIT IV: a) Fat- Types, functions, sources, requirement, storage, Effect of deficiency and excess.
b) Vitamin- Types, functions, sources, requirement, storage, Effect of deficiency and excess.

UNIT V: a) Minerals- Types, functions, sources, requirement, storage, Effect of deficiency and excess. b) Water and electrolytes- Concept and importance

Reference Books:

- Nutrition Science by B. Srilakshmi
- Fundamentals of Foods & Nutrition by Sumati R. Mudambi
- Textbook of Nutrition : A Life cycle approach by Ravinder Chadha
- Swaminathan M (2005). Handbook of Foods and Nutrition. Published by: Ganesh and Co.Pvt. Ltd. Madras



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FSN 103	I	Human Physiology I	60	20	20	0	0	4	0	0	4

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P	Practical	

Course Objective

To enable the student to understand the Physiology of human body.

Course Outcome

Students should have a command on the knowledge of working of human body and its different mechanisms.

FSN: 103 Human Physiology I

UNIT I: Unit of Life: Structure and functions of cell with special reference to Plasma membrane, (Fluid Mosaic Model), Mitochondria, Ribosome, Endoplasmic reticulum, Nucleus (nuclear membrane, nuclear chromatin and nucleolus). Nucleotide, Homeostasis, Positive and Negative feed back

UNIT II: Circulatory and Cardiovascular system: Blood and its composition, formed elements, Blood groups, Mechanism of blood coagulation, Introduction to immune system, Erythropoiesis and anaemia, Structure and functions of heart, Cardiac cycle, cardiac output, blood pressure and its regulation.

UNIT III: Digestive System: Structure and functions of G.I. tract, Process of digestion and absorption of food, Structure and functions of liver, gallbladder and pancreas.



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UNIT IV: Respiratory System: Structure of Lungs and gaseous exchange (oxygen and carbon dioxide transport).

UNIT V: Musculoskeletal System: Formation and functions of muscles, bones. Mechanism of muscle contraction, isometric and isotonic muscle contraction.

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FSNP 106	I	Human Physiology I- Practical	0	0	0	30	20	0	0	4	2

FSNP 106: Practicals:

- Study of Human skeleton.
- Blood Cells : Fresh mount and stained.
- Determination of haemoglobin percentage in blood.
- Coagulation of blood and blood grouping.
- Measurement of blood pressure using sphygmomanometer.
- To study human systems through charts & models.

Reference Books:

- Chatterjee (1988) Human Physiology, Calcutta , Medical agency.
- Pears E.C (1988) , Anatomy and Physiology for nurses – Delhi oxford University, Press.
- A text book of biology – Dhama and Dhama Pradeep Publications.
- Gyton A.C., Hall , J.E 1996 : Textbook of medical physiology, 9th Ed, prism Books (Pvt) ltd. Bangalore



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FSN 104	I	Applied Physics	60	20	20	0	0	4	0	0	4

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P	Practical	

Course Objectives

- To understand basic principles of physics and its application to nutrition.
- To understand working of household appliances.

FSN 104: Applied Physics

UNIT I: General Properties of Matter and Mechanics -Matter and energy, Different types of energy, Systems of unit, Fundamental and derived units – Length, Mass, time, area,volume, density, velocity etc. Mass and weight, Density and specific gravity.

UNIT II: Force & Pressure -Liquid pressure, Atmospheric pressure, Friction, its causes, advantages and disadvantages, Electromagnetic radiation and its properties, Elasticity, Viscosity, Surface tension.

UNIT III: Heat- Heat and temperatures, Expansion, Different scales of temperature, Different types of thermometers, conversions from one scale to another, Specific heat, Latent heat.

UNIT IV: Heat contd- Solid, liquid, gas – inter conversions, Melting, Boiling and evaporation, Effect of pressure and impurity on boiling point and melting point, Freezing mixtures, Vacuum pans, Pressure cookers, Modes of transfer of heat, Household applications of the knowledge.



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UNIT V: Principles of electricity and working of appliances-Sources of electricity, Alternate and direct current, Ohm's law, Calculation of cost of using electrical energy, Fuses and circuit breakers, Fire hazards, Fire extinguishers, Electric iron, toaster, geyser, cooking range, Microwave Oven, Solar cookers, solar cells, Refrigerator.

Reference Books:

- Madalyn Avery Digitized 2011 – Bound Volume 1955: Household Physics : A textbook for college students of Home Economics, Macmillan Publisher
- Peet LJ (1979) Household Equipment (6th ed.), New York: John Wiley & Sons
- Van Zante J (1970) Household Equipment Principles, New York; Prentice Hall



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HU 101	I	Foundation English I	60	20	20	30	20	3	0	2	4

Abbreviation		Teacher Assessment (Theory) based on following components: Quiz / Assignment / Project / Participation in class (Given that no component shall exceed 10 Marks).
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P	Practical	
		Teacher Assessment (Practical) based on following components: Viva/ File/ Participation in Lab work (Given that no component shall exceed 50% of Marks).

Course Objectives

- To develop the second language learners' ability to enhance and demonstrate LSRW Skills.
- To enable students to acquire English Language Skills to further their studies at advanced levels.
- To prepare students to become more confident and active participants in all aspects of their undergraduate programs.

Course Outcomes

- The students should be able to enhance confidence in their ability to read, comprehend, organize, and retain written information.
- Write grammatically correct sentences for various forms of written communication to express oneself.

HU 101: Foundation English I

UNIT I: Communication: Nature, Meaning, Definition, Process, Functions and importance, Characteristics of Business Communication Verbal and Non Verbal Communication Barriers to Communication.

UNIT II: Listening: Process, Types, Difference between Hearing and Listening, Benefits of Effective



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Listening Barriers to Effective Listening, Overcoming Listening Barriers, and How to Become an Effective Listener

UNIT III: Basic Language Skills: Grammar and usage- Parts of Speech, Tenses, S-V Agreement, Preposition, Article, Types of Sentence, Direct - Indirect, Active - Passive voice, Phrases & Clauses.

UNIT IV: Business Correspondence : Business Letters, Parts & Layouts of Business Letter, Resume and Job application , Application Calling/ Sending Quotations/ Orders/ Complaints. E-mail writing

UNIT V: Précis Writing, Noting: The Purpose of Notes, Methods of Note-Taking, General Principles of Good Notes. Drafting: Notice, Agenda and Minutes. Advertisement: Importance, Types, Various Media of Advertising. Slogan Writing.

Practicals:

- Self Introduction
- Reading Skills and Listening Skills
- Linguistics and Phonetics
- Role play
- Oral Presentation – Preparation & Delivery using Audio – Visual Aids with stress on body language and voice modulations.

Reference Books:

- Ashraf Rizvi.(2005).*Effective Technical Communication*. New Delhi:Tata Mc Graw Hill
- A.J. Thomson and A.V. Martinet(1991).*A Practical English Grammar*(4th ed). Newyork: Oxford IBH Pub.
- Kratz, Abby Robinson (1995). *Effective Listening Skills*. Toronto: ON: Irwin Professional Publishing.
- Adair, John (2003). *Effective Communication*. London: Pan Macmillan Ltd.