

SHRI DAVARA UNIVERSITY

NAYA RAIPUR (C.G.)



PROGRAMME CURRICULUM

FOR

BACHELOR OF SCIENCES

(DIET AND NUTRITION)

SEMESTER-II

AS PER NEW EDUCATION

POLICY-2020

AND

NATIONAL EDUCATION POLICY

2025

FOUR YEAR UNDERGRADUATE

PROGRAMME 2024-25

(EFFECTIVE FROM THE SESSION-2024-2025)

INTRODUCTION OF THE DEPARTMENT: -

DIET AND NUTRITION

Introduction

The Department of Diet and Nutrition is an academic and research department that focuses on the study of nutrition and dietetics. The department aims to provide students with a comprehensive understanding of the principles of nutrition and dietetics, as well as the skills and knowledge necessary to apply this knowledge in a variety of settings.

Mission

The mission of the Department of Diet and Nutrition is to:

1. Provide quality education: Offer undergraduate and graduate programs in diet and nutrition that prepare students for careers in healthcare, education, and industry.
2. Conduct innovative research: Conduct research that advances the field of nutrition and dietetics, and improves human health and well-being.
3. Serve the community: Provide service to the community through outreach programs, consulting, and other activities that promote healthy eating and lifestyle habits.

Objectives

The objectives of the Department of Diet and Nutrition are to:

1. Develop competent professionals: Graduates will have the knowledge, skills, and attitudes necessary to practice as competent dietitians and nutritionists.
2. Advance knowledge: Conduct research that advances the field of nutrition and dietetics, and improves human health and well-being.
3. Promote healthy lifestyles: Provide education and service to the community that promotes healthy eating and lifestyle habits.

Programs Offered

The Department of Diet and Nutrition offers the following programs:

1. **Bachelor of Science in Nutrition:** A four-year undergraduate program that prepares students for careers in nutrition and dietetics.
2. **Master of Science in Nutrition:** A two-year graduate program that prepares students for advanced careers in nutrition and dietetics.
3. **Dietetic Internship Program:** A post-graduate program that provides students with practical experience in dietetics.

Research Areas

The Department of Diet and Nutrition has research expertise in the following areas:

1. **Nutrition and chronic disease:** The relationship between diet and chronic diseases such as heart disease, diabetes, and cancer.
2. **Nutrition and exercise:** The relationship between diet, exercise, and physical performance.
3. **Nutrition and behavior:** The psychological and social factors that influence food choice and eating behavior.

Facilities

The Department of Diet and Nutrition has state-of-the-art facilities, including:

1. **Nutrition laboratory:** A well-equipped laboratory for conducting nutrition research.
2. **Dietetics clinic:** A clinic where students can gain practical experience in dietetics.
3. **Food science laboratory:** A laboratory for conducting food science research.

Vision

"To be a leading academic and research department in the field of diet and nutrition, fostering a community of scholars, practitioners, and leaders who advance the science and practice of nutrition to promote health, well-being, and quality of life for individuals, communities, and society."

Key Components of the Vision

1. **Leadership:** The department aims to be a leader in the field of diet and nutrition, recognized for its academic and research excellence.
2. **Interdisciplinary collaboration:** The department fosters collaboration among scholars, practitioners, and leaders from diverse disciplines to advance the field of nutrition.
3. **Innovative research:** The department conducts innovative research that advances the science and practice of nutrition, addressing pressing health and nutrition challenges.
4. **Excellence in education:** The department provides high-quality education and training programs that prepare students for successful careers in dietetics, nutrition, and related fields.
5. **Community engagement:** The department engages with local, national, and global communities to promote health, well-being, and quality of life through nutrition education, research, and service.
6. **Diversity, equity, and inclusion:** The department values diversity, equity, and inclusion, fostering a culture that promotes respect, empathy, and social justice.

Strategic Goals

1. **Enhance academic programs:** Develop and refine undergraduate and graduate programs to meet the evolving needs of students and the profession.
2. **Advance research and scholarship:** Foster a culture of research excellence, securing external funding and publishing high-impact research.
3. **Foster community engagement:** Develop partnerships with local, national, and global communities to promote nutrition education, research, and service.
4. **Promote diversity, equity, and inclusion:** Develop and implement strategies to promote diversity, equity, and inclusion within the department

and the profession.

5. Enhance departmental infrastructure: Develop and maintain state-of-the-art facilities, equipment, and technology to support academic and research programs.

Scopes

1. Undergraduate programs: Offer undergraduate degrees in nutrition, dietetics, and related fields.
2. Graduate programs: Offer master's and doctoral degrees in nutrition, dietetics, and related fields.
3. Certificate programs: Offer certificate programs in specialized areas of nutrition and dietetics.
4. Continuing education: Provide continuing education opportunities for professionals in the field of nutrition and dietetics.

Research Scopes

1. Clinical nutrition research: Conduct research on the role of nutrition in preventing and managing diseases.
2. Community nutrition research: Conduct research on the nutritional needs and behaviors of diverse populations.
3. Food science research: Conduct research on the nutritional and sensory properties of foods.
4. Nutrition policy research: Conduct research on the development and implementation of nutrition policies.

Professional Scopes

1. Clinical dietetics: Provide medical nutrition therapy to patients in hospitals, clinics, and private practice.
2. Community nutrition: Work with communities to develop and implement nutrition programs and policies.
3. Food industry: Work in the food industry to develop and market nutritious food products.
4. Public health: Work in public health to develop and implement nutrition programs and policies.

Entrepreneurial Scopes

1. Nutrition consulting: Start a consulting business to provide nutrition expertise to individuals, companies, and organizations.
2. Food product development: Develop and market nutritious food products.
3. Health and wellness services: Offer health and wellness services, such as nutrition counseling, meal planning, and cooking classes.
3. Digital health: Develop digital health products and services, such as nutrition apps and online nutrition counseling.

Global Scopes

1. International nutrition research: Collaborate with international researchers to

conduct

studies on nutrition and health.

2. Global health nutrition: Work with international organizations to develop and implement

nutrition programs and policies.

3. Food security: Work on food security initiatives to ensure access to nutritious food for all.

4. Cultural competency: Develop cultural competency in nutrition practice to work effectively with diverse populations.

Programme Outcomes

1. Knowledge: Demonstrate a thorough understanding of the principles of nutrition, dietetics, and food science.

2. Critical thinking: Apply critical thinking skills to evaluate the nutritional needs of individuals and groups.

3. Communication: Communicate effectively with clients, patients, and healthcare professionals about nutrition and dietetics.

4. Practical skills: Demonstrate practical skills in food preparation, meal planning, and nutrition assessment.

5. Professionalism: Demonstrate professionalism and ethics in the practice of dietetics.

Graduate Attributes

1. Nutrition knowledge: Apply knowledge of nutrition and dietetics to promote health and well-being.

2. Critical thinking: Use critical thinking skills to evaluate the nutritional needs of individuals and groups.

3. Communication: Communicate effectively with clients, patients, and healthcare professionals about nutrition and dietetics.

4. Problem-solving: Use problem-solving skills to develop and implement nutrition plans.

5. Teamwork: Work effectively as part of a healthcare team to promote health and well-being.

Career Opportunities

1. Dietitian: Work as a dietitian in hospitals, clinics, or private practice.
2. Nutritionist: Work as a nutritionist in industry, government, or non-profit organizations.
3. Food service manager: Manage food service operations in hospitals, schools, or other institutions.
4. Health educator: Teach people about healthy eating and lifestyle habits.

Course Outcomes

1. Nutrition principles: Understand the principles of nutrition, including the functions of macronutrients and micronutrients.
2. Dietetics principles: Understand the principles of dietetics, including meal planning, food preparation, and nutrition assessment.
3. Food science principles: Understand the principles of food science, including food chemistry, food microbiology, and food technology.
4. Nutrition and health: Understand the relationship between nutrition and health, including the role of nutrition in preventing and managing diseases.

UNIT OUTCOME-

Unit 1: Introduction to Nutrition

1. Define the scope of nutrition: Explain the importance of nutrition in maintaining health and preventing disease.
2. Describe the six classes of nutrients: Identify the six classes of nutrients and their functions in the body.
3. Explain the concept of nutritional balance: Discuss the importance of balance in the diet and how it relates to health.

Unit 2: Macronutrients

1. Describe the structure and function of carbohydrates: Explain the different

types of carbohydrates and their roles in the body.

2. Explain the importance of protein in the diet: Discuss the functions of protein in the body and the consequences of protein deficiency.

3. Describe the different types of fats and their functions: Explain the roles of saturated, monounsaturated, and polyunsaturated fats in the body.

Unit 3: Micronutrients

1. Describe the functions of vitamins in the body: Explain the roles of fat-soluble and water-soluble vitamins in maintaining health.

2. Explain the importance of minerals in the diet: Discuss the functions of major and trace minerals in the body.

3. Describe the consequences of micronutrient deficiencies: Discuss the health consequences of deficiencies in vitamins and minerals.

Unit 4: Nutrition and Health

1. Explain the relationship between diet and chronic disease: Discuss the role of diet in the development of chronic diseases such as heart disease, diabetes, and cancer.

2. Describe the importance of nutrition in maintaining healthy weight: Discuss the role of diet and physical activity in maintaining healthy weight.

3. Explain the consequences of malnutrition: Discuss the health consequences of malnutrition, including undernutrition and overnutrition.

SEMESTER II											
S.NO	COURSE CODE	COURSE TITLE	TEACHING HOURS PER WEEK				EXAMINATION SCHEME				
			L	T	P	C	THEORY		PRACTICAL		TOTAL MARKS
DISCIPLINE SPECIFIC COURSE (DSC)							EX	IN	E X	IN	
1.	DUND201T	Human Physiology II	3	1	0	4	70	30	-	-	100
2.	DUND202T	Nutrition through life cycle	3	1	0	4	70	30	-	-	100
3.	DUND203T	Food Science II	3	1	0	4	70	30	-	-	100
GENERAL ELECTIVE (GE)											
4.	SCGE-02	Constitutional Government in India	3	1	0	4	70	30	-	-	100
ABILITY ENHANCEMENT COURSE (AEC)											
5.	AEC-02	Hindi Language	2	0	0	2	35	15	-	-	50
SKILLS ENHANCEMENT COURSE (SEC)											
6.	SEC-02	Chemistry Lab Skills -II	1	1	0	2	35	15	-	-	50
PRACTICALS (LAB)											
7.	DUND202P	Nutrition through life cycle lab			2	1	35	15			50
Total Contact hours Per sWeek:30			Total credit:			21	Total mark				550

FOUR YEAR UNDERGRADUATE PROGRAM (2024-28)

DEPARTMENT OF NUTRITION AND DIETETICS

COURSE CURRICULUM

PART-A: Introduction		
Programme: Bachelor in Sciences (Certificate/Diploma/Degree Honors)	Semester-II	Session: 2024-2025
Course Code	DUND201T	
Course Title	HUMAN PHYSIOLOGY II	
Course Type	Discipline Specific course (DSC)	
Pre-requisite (if any)	As per program	
Course Learning Outcomes (CLO)	<p>At the end of this course, the students will be able to</p> <ul style="list-style-type: none"> ➤ have an enhanced knowledge and appreciation of mammalian physiology; ➤ understand the functions of important physiological systems including the cardio- respiratory, renal, reproductive, and metabolic systems; ➤ understand how these separate systems interact to yield integrated physiological responses to challenges such as exercise, fasting and ascent to high altitude, and how they can sometimes fail; 	
Credit Value	4 Credits	1 Credit =15 Hours-learning & Observation
Total Marks	Max. Marks:=100	Min Passing Marks: 40
PART -B: Content of the Course		
Total No. of Teaching-learning Periods (01 Hr. per period) -60 Periods (60 Hours)		
Unit	Topics (Course contents)	
I	<p>NERVOUS SYSTEM Central nervous system - Brain and spinal cord – structure and function. Cerebrospinal fluid. Peripheral nervous system - cranial and spinal nerves. Autonomic nervous system – parasympathetic and sympathetic system – conduction of nerve impulse, synapse, reflex arc, reflex action. Diseases and Disorders - insomnia, alzheimer’s disease, schizophrenia, hydrocephaly, meningitis.</p>	
II	<p>SENSE ORGANS Eye – Structure and functions. Physiology of vision. Defects in vision – myopia and hypermetropia, astigmatism. Diseases – Conjunctivitis, trachoma, glaucoma, cataract. Ear – Structure and functions. Deafness, vertigo. Nose – Structure and functions. Sinusitis. Skin – Structure and functions. Dermatitis and burns. ENDOCRINE SYSTEM Hormones – Endocrine glands - Pituitary, Thyroid, Parathyroid, Pancreas (endocrine function), Adrenal – Their structure and functions. Hormones of reproduction. Disorders of over and under secretion.</p>	

III	<p>REPRODUCTIVE SYSTEM Male reproductive system – Structure and functions. Spermatogenesis. Female reproductive system – Structure and functions. Oogenesis. Menstrual cycle, Puberty, Menopause. Fertilization, Development of fertilized ovum (Brief account) – Placenta and its functions – Parturition. Physiology of lactation – Hormonal control in lactation. Abortion, Ectopic pregnancy, multiple pregnancy, artificial insemination, test tube baby - IVF, ETT & GIFT.</p>	15
IV	<p>MUSCULOSKELETAL SYSTEM Skeletal system – Structure of bone, Functions of the skeletal system. Joints – Types of joints. Muscular system – Functions of the muscles. Muscular contraction. Diseases and disorders - arthritis, Osteoporosis, tetany, muscle fatigue, rigor mortis, myasthenia gravis</p>	10
Keywords	.	
<p><i>Signature of Convener & Members (CBoS)</i></p>		

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FOUR YEAR UNDERGRADUATE PROGRAM (2024-28)

DEPARTMENT OF NUTRITION AND DIETETICS

COURSE CURRICULUM

PART-C: Learning Resources		
McWilliams Ph.D. R.D. Professor Emeritus, Margaret, Fundamentals of Meal Management (5th Edition), Pearson Publications.		
Text Books Recommended-		
1. Air Cmdre, L. K. Sharma, Nutrition, Dietician and Health Management, Surendra Publications. 2. Nutrition for the community, Neeraj Publications. 3. B. Srilakshmi, Dietetics, New Age International Publishers		
Online Resources- <ul style="list-style-type: none">➤ e-books and e-learning portals➤ https://bit.ly/3AvV3mZ➤ https://bit.ly/30V85z➤ https://bit.ly/3C9PXPS➤ https://bit.ly/301p9rZ➤ https://bit.ly/BPnwqe		
Online Resources- e-sources/e-books and e-learning portals		
PART -D: Assessment and Evaluation		
Suggested Continuous Evaluation Methods: Maximum Marks: 100 Marks Continuous Internal Assessment (CIA): 30 Marks End Semester Exam (ESE): 70 Marks		
Continuous Internal Assessment (CIA): 30 (By Course Teacher)	Internal Test/Quiz:20+20 Assignment/ Semenar-10 Total Marks-30	Better marks out of the two Tot Quiz + obtained marks in Assignment shall be considered against 15 Marks
End Semester Exam (ESE):70	Two section A&B Section A :Q1 Objective 10*1=10 Marks Q2 Short answer type-5*4=20 Section B : Descriptive answer type qts 1 out of 2frm each- 4*10=40 Marks	
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FOUR YEAR UNDERGRADUATE PROGRAM (2024-28)

DEPARTMENT OF NUTRITION AND DIETETICS

COURSE CURRICULUM

PART-A: Introduction		
Program: Bachelor in Sciences (Certificate/Diploma/Degree Honors)	Semester-II	Session: 2024-2025
Course Code	DUND202T	
Course Title	NUTRITION THROUGH LIFE CYCLE	
Course Type	Discipline Specific course (DSC)	
Pre-requisite (if any)	As per program	
Course Learning. Outcomes (CLO)	<p>At the end of this course, the students will be able to</p> <ul style="list-style-type: none"> ➤ Understand the concept and importance of nutrition across different stages of the life cycle. ➤ Plan and evaluate balanced diets appropriate for different age groups and physiological conditions. ➤ Identify common nutritional deficiencies, disorders, and lifestyle-related problems at various life stages. ➤ Apply nutritional knowledge to promote health, disease prevention, and quality of life throughout the life cycle. 	
Credit Value	4 Credits	1Credit =15 Hours-learning & Observation
Total Marks	Max. Marks:=100	Min Passing Marks: 40
PART -B: Content of the Course		
Total No. of Teaching-learning Periods (01 Hr. per period) -60 Periods (60 Hours)		
Unit	Topics (Course contents)	
I	<p>BASIC PRINCIPLES OF MEAL AND MENU PLANNING Factors to be considered in meal/menu planning. NUTRITION IN PREGNANCY AND LACTATION Pregnancy - Physiological stages of pregnancy, nutrition requirements food selection and Complications of pregnancy. Lactation - Physiology of lactation, nutritional requirements.</p>	20
II	<p>NUTRITION DURING INFANCY AND EARLY CHILDHOOD Infancy - Growth and development, nutritional requirements, breast feeding, infant formula. Introduction of supplementary foods. Early childhood. (Toddlers and Preschoolers) - Growth and nutrient needs, nutritional related problems, Feeding Pattern</p>	15
III	<p>NUTRITION FOR SCHOOL CHILDREN AND ADOLESCENCE 8 hours School children - Nutritional requirements, Importance of snacks, school lunch. Adolescence - Growth, Nutrient needs, food choice, eating habits, factors influencing.</p>	15

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IV	GERIATIC NUTRITION Factors affecting food intake and nutrients use, nutrient needs, nutrition related problems.	10
<i>Keywords</i>		
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FOUR YEAR UNDERGRADUATE PROGRAM (2024-28)

DEPARTMENT OF NUTRITION AND DIETETICS

COURSE CURRICULUM

PART-C: Learning Resources		
Text Books, Reference Books and Others		
<ol style="list-style-type: none"> 1. Manjula Shantaram, Biochemistry & Nutrition for B. Sc. Nursing, Jaypee Brothers Medical Publishers (P) Ltd. 2. Ruma Singh, Food and Nutrition for Nurses, Jaypee Brothers Medical Publishers (P) Ltd. 3. Y. K. Joshi, Basics of clinical nutrition, Jaypee Brothers Medical Publishers (P) Ltd. 		
Text Books Recommended-		
<ol style="list-style-type: none"> 1. B. Srilakshmi, Dietetics, New Age International Publishers. 2. T. Longvah, R. Ananthan, K. Bhaskaracharya, K. Venkalah, Indian Food Composition Tables, NIN 		
Online Resources-		
<ul style="list-style-type: none"> ➤ e-books and e-learning portals ➤ http://www.swayam.ac.in ➤ http://www.ignou.ac.in ➤ http://www.egvankosh.ac.in ➤ http://www.itm.sc.in ➤ http://www.eskillindia.org ➤ http://www.eshiksha.mp.gov.in ➤ http://www.viah.co.in ➤ http://www.internshala.com 		
Online Resources-		
e-sources/e-books and e-learning portals		
<ul style="list-style-type: none"> ➤ https://www.pbs.org/video/botany-basics-iuu2bl/ ➤ https://efaidohmannibpcapcalcleftindorkaj/https://www2.ca.uky.edu/apcom/pubs/ho/ho96/ho96.pdf ➤ https://www.botanytoday.com/branches-of-botany 		
PART -D: Assessment and Evaluation		
Suggested Continuous Evaluation Methods:		
Maximum Marks: 100 Marks		
Continuous Internal Assessment (CIA): 30 Marks		
End Semester Exam (ESE): 70 Marks		
Continuous Internal Assessment (CIA): 30 (By Course Teacher)	Internal Test/Quiz:20+20 Assignment/ Semenanar-10 Total Marks-30	Better marks out of the two Tot Quiz + obtained marks in Assignment shall be considered against 15 Marks
End Semester Exam (ESE):70	Two section A&B Section A :Q1 Objective 10*1=10 Marks, Q2 Short answer type-5*4=20 Section B : Descriptive answer type qts 1 out of 2frm each- 4*10=40 Marks	
<i>Signature of Convener & Members (CBoS)</i>		

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FOUR YEAR UNDERGRADUATE PROGRAM (2024-28)

DEPARTMENT OF NUTRITION AND DIETETICS

COURSE CURRICULUM

PART- A: Introduction		
Program: Bachelor in Sciences (Certificate/Diploma/Degree/Honors)	Semester-II	Session: 2024-2025
Course Code	DUND202P	
Course Title	Lab.Course-01 NUTRITION THROUGH LIFE CYCLE	
Course Type	Laboratory course	
Pre-requisite(if any)	As per program	
Course Learning. Outcomes (CLO)	<p>At the end of this course, the students will be able to</p> <ul style="list-style-type: none"> ➤ Recognition and understanding the microscopy appearance of tissues. ➤ Gain knowledge of structure of bone. ➤ Understanding the determination of blood cell and clotting time. ➤ Know about determination of blood group. ➤ Understanding the basic concepts of ESR and blood pressure. 	
Credits Value	1 Credits	Credit =30 Hours Laboratory or Field learning/Training
Total Marks	Max. Marks:50	Min Passing Marks: 20
PART-B: Content of the Course		
Total No. of learning-Training/performance Periods: 30 Periods (30 Hours)		
Module	Topics (Course contents)	No. of Period
Lab/ field Training/ Experiment Content of Course	<ol style="list-style-type: none"> 1. Planning diet for adult men and women, during different activities - sedentary, moderate, heavy worker - preparation of above diets. 2. Planning and preparation of balanced diet for a pregnant woman. 3. Planning and preparation of balanced diet for a nursing mother. 4. Supplementary feeding - Preparation of weaning foods, 5. Planning and preparation of diet for toddler and pre-school child 6. Planning and preparation of meals/packed lunch 7. Nutrition during adolescence - Preparation of meals 8. Planning a diet for senior citizen - Preparation of meals 	30

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	9. Planning meals for middle income family - important consideration in planning meals.	
Keywords		
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FOUR YEAR UNDERGRADUATE PROGRAM (2024-28)

DEPARTMENT OF NUTRITION AND DIETETICS

COURSE CURRICULUM

PART-C: Learning Resources		
<ol style="list-style-type: none"> 1. ManjulaShantaram, Biochemistry & Nutrition for B. Sc. Nursing, Jaypee Brothers Medical Publishers (P) Ltd. 2. Ruma Singh, Food and Nutrition for Nurses, Jaypee Brothers Medical Publishers (P) Ltd. 		
Text Books Recommended-		
Reference Books Recommended-		
<ol style="list-style-type: none"> 1. B. Srilakshmi, Dietetics, New Age International Publishers 2. T. Longvah, R. Ananthan, K. Bhaskaracharya, K. Venkalah, Indian Food Composition Tables, NIN. 3. DarshanSohi, Nutrition & Dietetics, Pee Vee Publishers. 		
Online Resources-		
<ul style="list-style-type: none"> ➤ E-resources/e-books and e-learning portals ➤ http://www.swayam.ac.in ➤ http://www.ignou.ac.in ➤ www.egyankosh.ac.in ➤ www.litm.ac.in ➤ www.eskillindia.org ➤ www.eshiksha.mp.gov.in ➤ www.vlab.co.in 		
Online Resources-		
e-sources/e-books and e-learning portals		
<ul style="list-style-type: none"> ➤ https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5871155/ ➤ https://cms.botany.org/home/careers-jobs/careers-in-botany/arcas-of-specialization-in-botany.html 		
PART -D: Assessment and Evaluation		
Suggested Continuous Evaluation Methods:		
Maximum Marks: 50 Marks		
Continuous Internal Assessment (CIA): 15 Marks		
End Semester Exam (ESE): 35 Marks		
Continuous Internal Assessment (CIA): 15 (By Course Teacher)	Internal Test/Quiz:10+10 Assignment/ Semear-05 Total Marks-15	Better marks out of the two Tot Quiz + obtained marks in Assignment shall be considered against 15 Marks
End Semester Exam (ESE):35	Laboratory/Field Skill Performance: On spot Assessment	
	Section A : Performed the Task based on lab, work 20*1=20 Marks	
	B: Sporting based on lab, work (written) 10*1=10Marks	
	Section B : Viva-voce (based on principle/technology) - 5*1=05 Marks	
<i>Signature of Convener & Members (CBoS)</i>		

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FOUR YEAR UNDERGRADUATE PROGRAM (2024-28)

DEPARTMENT OF NUTRITION AND DIETETICS

COURSE CURRICULUM

PART-A: Introduction		
Program: Bachelor in Sciences (Certificate/Diploma/Degree Honors)	Semester-II	Session: 2024-2025
Course Code	DUND203T	
Course Title	FOOD SCIENCE - II	
Course Type	Discipline Specific course (DSC)	
Pre-requisite (if any)	As per program	
Course Learning Outcomes (CLO)	<p>After successfully completing this course, the students will be able to –</p> <ul style="list-style-type: none"> ➤ Understand the different forms of sugar such as sugar, jaggery, honey, and syrup, their manufacture, selection, storage, use as preservatives, and stages of sugar cookery. ➤ Identify various types of fats and oils (animal and vegetable), their processing methods, changes during cooking, storage practices, cost, and nutritional importance, including the nutritive value of nuts and oilseeds. ➤ Explain the types, composition, and uses of raising agents in cookery and bakery, and understand food adjuncts such as spices, condiments, herbs, food colours, and their proper procurement and storage. ➤ Describe convenience foods, their role, types, advantages, cost, uses, and contribution to a balanced diet. 	
Credit Value	4 Credits	1 Credit =15 Hours-learning & Observation
Total Marks	Max. Marks:=100	Min Passing Marks: 40
PART -B: Content of the Course		
Total No. of Teaching-learning Periods (01 Hr. per period) -60 Periods (60 Hours)		
Unit	Topics (Course contents)	
I	SUGAR AND SUGAR COOKERY: Different forms of sugar (sugar, jaggery, honey syrup) manufactures, selection, storage and use as preservatives. Stages of sugar cooking.	15
II	FATS AND OILS: Types of fats and oils (animal and vegetable), processing and changes (hydrogenation, rancidity, smoking point, emulsification), uses, storage, cost and nutritional aspects. Nuts and oilseeds: Nutritive value and toxins.	15
III	RAISING AGENTS AND FOOD ADJUNCTS: Raising agents - Types, constituents, uses in cookery and bakery, different types of cakes- sponge, chiffon and shortened cakes. Food Adjuncts - Spices, condiments, herbs, extracts, concentrates, essences and food colours- origin, classification, description uses, specification, procurement and storage.	15
IV	CONVENIENCE FOODS: Role, types, advantages, uses, cost and contribution to diet. TEA, COFFEE, CHOCOLATE & COCOA: Cultivation, processing, cost and	15

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	nutritional aspects.	
Keywords		
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FOUR YEAR UNDERGRADUATE PROGRAM (2024-28)

DEPARTMENT OF NUTRITION AND DIETETCS

COURSE CURRICULUM

PART-C: Learning Resources		
Text Books, Reference Books and Others		
1. F. P. Antia & Philip Abraham, Clinical Dietetics and Nutrition, Oxford University Press. 2. B. Srilakshmi, Nutrition Science, New Age Publisher.		
Online Resources- https://onlinecourses.nptel.ac.in/noc22_cy06/preview https://nptel.ac.in/courses/104105076		
Online Resources- e-sources/e-books and e-learning portals https://onlinecourses.nptel.ac.in/noc22_cy06/preview https://nptel.ac.in/courses/104105076		
PART -D: Assessment and Evaluation		
Suggested Continuous Evaluation Methods: Maximum Marks: 100 Marks Continuous Internal Assessment (CIA): 30 Marks End Semester Exam (ESE): 70 Marks		
Continuous Internal Assessment (CIA): 30 (By Course Teacher)	Internal Test/Quiz:20+20 Assignment/ Semenar-10 Total Marks-30	Better marks out of the two Tot Quiz + obtained marks in Assignment shall be considered against 15 Marks
End Semester Exam (ESE):70	Two section A&B Section A :Q1 Objective 10*1=10 Marks Q2 Short answer type-5*4=20 Section B : Descriptive answer type qts 1 out of 2frm each- 4*10=40 Marks	
<i>Signature of Convener & Members (CBoS)</i>		

FOUR YEAR UNDERGRADUATE PROGRAM (2024-28)

DEPARTMENT OF POLITICAL SCIENCES

COURSE CURRICULUM

PART-A: Introduction		
Program: Bachelor in Life Sciences (Certificate/Diploma/Degree Honors)	Semester-II	Session: 2024-2025
Course Code	SCGE-02	
Course Title	Constitutional Government in India	
Course Type	Discipline General Elective course (GE)	
Pre-requisite(if any)	As per program	
Course Learning. Outcomes (CLO)	After completion of the course, the student shall be able to.. <ul style="list-style-type: none"> ➤ Construct the political ideals mentioned in the preamble of the constitution. ➤ Assess the provisions of citizenship, fundamental rights and duties and their correlation. ➤ Examine the role of president and the functioning of union executive. ➤ Interpret the provisions and functioning of the union legislature and constitutional bodies of functional democracy, like election commission, finance commission and C&AG. 	
Credit Value	4 Credits	Credit =60 Hours-learning & Observation
Total Marks	Max. Marks:=100	Min Passing Marks: 40
PART -B: Content of the Course		
Total No. of Teaching-learning Periods (01 Hr. per period) -45 Periods (45 Hours)		
Unit	Topics (Course contents)	
I	Constitution Citizenship and Rights Making of Indian Constitution: Cabinet mission plan and Constituent assembly. Preamble, features, Sources. Schedules, citizenship. Fundamental Rights and Duties, Directive Principles of State Policy. Constitution Amendment Process.	12
II	Union President, Vice President, Council of Ministers and Prime Minister. Federal Parliament Lok Sabha and Rajya Sabha. Supreme court Organization Functions, Powers, Judicial Review.	11
III	Union and Federal administration controller and auditor general Centre State Relations: Legislative, Financial, Administrative. Union and state public service commission, Election Commission, Finance Commission.	11
IV	State and Local self government Legislature, Executive: Governor, Council of Ministers and Chief Minister. State High Court-Organization. Functions, Rights.	11
Keywords	Political theory, state, sovereignty, right, they, democracy, constitution, party.	
Signature of Convener & Members (CBoS)		

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FOUR YEAR UNDERGRADUATE PROGRAM (2024-28)

DEPARTMENT OF POLITICAL SCIENCE

COURSE CURRICULUM

PART-C: Learning Resources		
Text Books, Reference Books and Others		
Text Books Recommended-		
<ol style="list-style-type: none"> 1. Ambadatt Pant Harimohan Jain Madan Gopal (1985) Fundamentals of Political Science, Central Publishing House Allahabad. U.P. 2. Sandhu Man Singh (1956) Political Theory Hindi Medium Implementation Directorate, Delhi University, New Delhi 3. Johari JC 1916) Basic principles of political science, Sahitya Bhavan, Agra. 4. Rajeev and Ashok Acharya (Eds) Political Theory A Flag, Dilsey Pearson, 2008 		
Reference Books Recommended-		
<ol style="list-style-type: none"> 1 umar, Sanjeev (Ed. Understanding of Political Theory, Delhi: Orient Book Swan, 2019 2 Hussain Shakeel (2018) Conceptual Introduction to Political Theory. Chhattisgarh State Hindi Forest Academy, Rampur. 3 K.K. Mishra (2010) Political Theory, 5. Chand Publishing Delhi 4 OP Gouba (2014) An Introduction to Political Theory, MacMillan Publishers, Delhi 		
Online Resources-		
<ul style="list-style-type: none"> ➤ e-books and e-learning portals ➤ https://www.coursera.org/lecture/emergence-of-life/-http://www.ignou.ac.in ➤ https://www.shiksha.com/online-courses/-http://www.itm.sc.in ➤ https://www.youtube.com/watch?v=uK-XYhttp://www.eshiksha.mp.gov.in ➤ https://www.youtube.com/watch?v=WxMSckEcio4http://www.internshala.com 		
Online Resources-		
e-sources/e-books and e-learning portals		
<ul style="list-style-type: none"> ➤ https://www.pbs.org/video/political-basics-iuu2bl/ ➤ https://efaidohmannibpcapcalcleftindorkaj/https://www2.ca.uky.edu/apcom/pubs/ho/ho96/ho96.pdf ➤ https://www.botanytoday.com/branches-of-botany 		
RT -D: Assessment and Evaluation		
Suggested Continuous Evaluation Methods:		
Maximum Marks: 100 Marks		
Continuous Internal Assessment (CIA): 30 Marks		
End Semester Exam (ESE): 70 Marks		
Continuous Internal Assessment (CIA): 30 (By Course Teacher)	Internal Test/Quiz:20+20 Assignment/ Sememar-10 Total Marks-30	Better marks out of the two Tot Quiz + obtained marks in Assignment shall be considered against 15 Marks
End Semester Exam (ESE):70	Two section A&B Section A :Q1 Objective 10*1=10 Marks Q2 Short answer type-5*4=20 Section B : Descriptive answer type qts 1 out of 2frm each- 4*10=40 Marks	
<i>Signature of Convener & Members (CBoS)</i>		

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FOUR YEAR UNDERGRADUATE PROGRAM (2024-28)

DEPARTMENT OF HINDI

COURSE CURRICULUM

PART-A: Introduction		
Program: Bachelor in Life Sciences (Certificate/Diploma/Degree Honors)	Semester-II	Session: 2024-2025
Course Code	AEC-02	
Course Title	Hindi Language	
Course Type	Ability Enhancement Course	
Pre-requisite(if any)	As per program	
Course Learning. Outcomes (CLO)	After the completion of this course, the students will be able to- <ul style="list-style-type: none"> ➤ लोकप्रिय हिन्दी भाषा एवं व्याकरण संबंधी ज्ञान से समृद्ध होंगे। ➤ भाषा ज्ञान के माध्यम से भारतीय संस्कृति एवं भावनात्मक एकता के महत्व को समझने की क्षमता विकसित हो सकेगी। ➤ मुहावरे एवं लोकोक्तियों का महत्व समझ सकेंगे। व्यंग्य, निबंध एवं कविता विधा से परिचित होंगे। ➤ निबंध लेखन एवं अपठित गद्यांश के माध्यम से विद्यार्थियों का बौद्धिक विकास हो सकेगा। 	
Credit Value	2 Credits	Credit =30 Periods -learning & Observation
Total Marks	Max. Marks:=50	Min Passing Marks: 20
PART -B: Content of the Course		
Total No. of Teaching-learning Periods (45 Min. per period) -30 Periods		
Unit	Topics (Course contents)	
I	रचनाएँ— भारत वंदना — सूर्यकांत त्रिपाठी निराला (कविता) चीफ़ — हरिशंकर परसाई (व्यंग्य) चोरी और प्रायश्चित — महात्मा गाँधी (निबंध)	08
II	हिन्दी व्याकरण एवं शब्द रचना प्रत्यय, संधि, समास पर्यायवाची शब्द, विलोम शब्द, अनेकार्थी शब्द, समश्रुत शब्द, अनेक शब्दों के लिए एक शब्द	07
III	हिन्दी व्याकरण एवं रचनात्मक पक्ष मुहावरे एवं लोकोक्तियाँ पारिभाषिक शब्दावली एवं हिन्दी में पदनाम, शब्द शुद्धि, वाक्य शुद्धि	08
IV	रचनात्मक लेखन निबंध लेखन अपठित गद्यांश (नोट— विद्यार्थी को किसी एक विषय पर निबंध तथा प्रदत्त गद्यांश का शीर्षक एवं सारांश लिखना होगा।)	07
Keywords	रचनात्मक लेखन, निबंध लेखन, हिन्दी व्याकरण एवं रचनात्मक पक्ष	
Signature of Convener & Members (CBoS)		

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FOUR YEAR UNDERGRADUATE PROGRAM (2024-28)

DEPARTMENT OF HINDI

COURSE CURRICULUM

PART-C: Learning Resources		
Text Books, Reference Books and Others		
Text Books Recommended-		
<ul style="list-style-type: none">• भारतीयता के अमर स्वर — डॉ. धनंजय वर्मा, मध्यप्रदेश हिन्दी अकादमी• आधुनिक हिन्दी व्याकरण और रचना — डॉ. वासुदेव नन्दन• हिन्दी भाषा और व्यवहार — डॉ. गंगा चरण त्रिपाठी• हिन्दी व्याकरण माला — डॉ. के. आर. गहिया, डॉ. विमलेश शर्मा• हिन्दी व्याकरण — कमता प्रसाद गुरु		
Online Resources-		
<ul style="list-style-type: none">➤ https://www.youtube.com/watch?v=WxMSckEcio4http://www.internshala.com➤ https://archive.org/details/personality-development-book/mode/lup➤ https://www.coursera.org/articles/presentation-skills➤ https://www.cbs.de/en/blog/15-effective-presentation-tips-to-improve-presentation-skills/➤ https://benjaminball.com/blog/good-body-language-best-visual-aid-talks/➤		
Online Resources-		
<ul style="list-style-type: none">➤ e-sources/e-books and e-learning portals https://blog.moderngov.com/importance-of-body-language-in-presentations-good-bad-➤ https://efaidohmannibpcapcalcelfindorkaj/https://www2.ca.uky.edu/apcom/pubs/ho/ho96/ho96.pdf➤ https://www.botanytoday.com/branches-of-botany		
PART -D: Assessment and Evaluation		
Suggested Continuous Evaluation Methods:		
Maximum Marks:	50 Marks	
Continuous Internal Assessment (CIA):	15 Marks	
End Semester Exam (ESE):	35 Marks	
Continuous Internal Assessment (CIA): 15 (By Course Teacher)	Internal Test/Quiz:10+10 Assignment/ Semenar-05 Total Marks-15	Better marks out of the two Tot Quiz + obtained marks in Assignment shall be considered against 15 Marks
End Semester Exam (ESE):70	Two section A&B Section A :Q1 Objective 1*5=5 Marks Q2 Short answer type-2*5=10 (I. Vocabulary, II Unseen passage Section B : Descriptive answer type qts 1 out of 2frm each- 5*4=20 Marks	

Signature of Convener & Members (CBoS)

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FOUR YEAR UNDERGRADUATE PROGRAM (2024-28)

DEPARTMENT OF CHEMISTRY

COURSE CURRICULUM

PART-A: Introduction		
Program: Bachelor in Life Sciences (Certificate/Diploma/Degree Honors)		Semester-II
		Session: 2024-2025
Course Code	SEC-01	
Course Title	Chemistry Lab Skills-II	
Course Type	Skills Enhancement Course (SEC)	
Pre-requisite(if any)	As per program	
Course Learning Outcomes (CLO)	Completing this course, students will be able to: - <ul style="list-style-type: none"> ➤ To understand different acid-base theories and solvent system. ➤ To learn the preparation, bonding, and reactions of C-C σ- & π- bonded compounds. ➤ To understand the concept and chemistry of aromatic compounds and their reactions. ➤ To learn the basic concepts of various states of matter & understand the basic concepts of surface chemistry and chemical kinetics. 	
Credit Value	1 Credits	Credit =30 Periods -learning & Observation
Total Marks	Max. Marks:=50	Min Passing Marks: 20
PART -B: Content of the Course		
Total No. of Teaching-learning Periods (45 Min. per period) -15 Periods		
Unit	Topics (Course contents)	
I	Introduction of Chemistry Laboratory General introduction of the chemistry laboratory, common instructions for safe working in chemical laboratories, Good Laboratory Practices (GLP), Good Manufacturing Practices (GMP).Laboratory design, Storage, ventilation, lighting, fume, cupboard, arrangement of the store, Safety provisions, Organization of practical work, Maintenance of laboratory, equipment Cleaning of laboratories and glasswares / plasticwares and preparation room. Classification of apparatus in store and laboratory.	08
II	Introduction of Chemistry Apparatus Glass apparatus - Beaker, test tube, boiling tube, funnel, separating funnel, filtration flask, round bottom flask, flat bottom flask, condenser Liebig flask, watglass etc. measuring conical or condenser, Petridis, desiccators. Volumetric Apparatus – Measuring cylinder, burette, pipette, volumetric flask, analytical balance, single-pan electronic balance/ electrical analytical balance, Micropipette, Three way Pipette Bulb etc.	07

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III	Introduction of Chemistry Equipments Clevenger apparatus, Buchner funnel, Soxhlet extractor, wire gauze, cork borers, filter pumps, crucible, mohl clip, pipe clay triangle, pestle and mortar, spirit lamp, spatulas, thermometer, pH meter	08
IV	Introduction of Chemistry Equipments- laboratory centrifuge. Apparatus for heating and reaction: Magnetic Stirrer, Bunsen burner, water bath, oil bath hot plate, sand bath, hot air oven, heating mantle etc.	07
Keywords	<i>Introduction of Chemistry Laboratory.</i> Introduction of Chemistry Apparatus. Introduction of Chemistry Equipments.	
<i>Signature of Convener & Members (CBoS)</i>		

FOUR YEAR UNDERGRADUATE PROGRAM (2024-28)

DEPARTMENT OF CHEMISTRY

COURSE CURRICULUM

PART-C: Learning Resources

- Text Books, Reference Books and Others Paula, B. Y. (2014). Organic Chemistry (7th Ed.). Pearson Education, Inc. (Singapore).
- Solomons, T. W. G. (2017). Organic Chemistry (Global Ed.). John Wiley & Sons.
- Morrison, R. T., & Boyd, R. N. (2010). Organic Chemistry (7th Ed.). Prentice-Hall Of India Limited.
- Laidler, K. J., & Meiser, J. H. (2006). Physical Chemistry (2nd Indian Ed.). CBS Publishers.
- . Atkins, P. W., & De Paula, J. (2006). Physical Chemistry (8th Ed.). Oxford University Press.
- . Dogra, S., & Dogra, S. (2006). Physical Chemistry through Problems (2nd Ed.). New Age International.
- Sangaranarayanan, M. V., & Mahadevan, V. (2011). Textbook of Physical Chemistry. University Press.

Text Books Recommended-

Text Books Recommended-

- Bahl, A., & Bahl, B. S. (2014). Organic Chemistry (22nd Ed.). S. Chand & Sons.
- Ahluwalia, V. K., & Goyal, M. (2001). A Textbook of Organic Chemistry. Narosa Publishing House.
- . Jain, M. K., & Sharma, S. C. (2017). Modern Organic Chemistry. Vishal Publishing Company. Puri, B. R., Sharma, L. R., & Pathania, M. S. (2013). Principles of Physical Chemistry (46th Ed.)..
- Shoban Lal Nagin Chand And Co. 5. Bahl, B. S. A., & Tuli, G. D. (2009). Essentials of Physical Chemistry (Multicolour Ed.). S. Chand & Company Pvt Ltd. 6. Puri, B. R., Sharma, L. R., & Kalia, K. C. (2018). Principles of Inorganic Chemistry. Nagin Chand and Co., New Delhi,

Reference Books Recommended-

- Atkins, P. W., & De Paula, J. (2006). Physical Chemistry (8th Ed.). Oxford University Press.
- . Dogra, S., & Dogra, S. (2006). Physical Chemistry through Problems (2nd Ed.). New Age International.

<p>Online Resources-</p> <ul style="list-style-type: none"> ➤ Introduction to Computer Fundamental from W3school: https://www.w3schools.blog/computer-fundamentals-tutorial ➤ Introduction to MS-Word from W3school: https://www.w3schools.blog/ms-word-tutorial ➤ Introduction to MS-Excel from W3school: https://www.w3schools.com/excel/excel_introduction.php ➤ Introduction to MS-PowerPoint from W3school: https://www.w3schools.blog/powerpoint-tutorial Introduction to MS-Access from W3school: ➤ https://www.youtube.com/watch?v=WxMSckEcio4 http://www.internshala.com 		
<p>Online Resources- e-sources/e-books and e-learning portals</p> <ul style="list-style-type: none"> ➤ https://www.rgydsm.org/uploads/books/MICROSOFT-OFFICE-BOOK.pdf ➤ https://www.youtube.com/watch?v=SH40YV5AJ6A ➤ https://www.youtube.com/watch?v=SH40YV5AJ6A ➤ https://hte.rajasthan.gov.in/dept/dte/board 		
<p>PART -D: Assessment and Evaluation</p>		
<p>Suggested Continuous Evaluation Methods: Maximum Marks: 50 Marks Continuous Internal Assessment (CIA): 15 Marks End Semester Exam (ESE): 35 Marks</p>		
<p>Continuous Internal Assessment (CIA): 15 (By Course Teacher)</p>	<p>Internal Test/Quiz:10+10 Assignment/ Semenar-10 Total Marks-15</p>	<p>Better marks out of the two Tot Quiz + obtained marks in Assignment shall be considered against 15 Marks</p>
<p>End Semester Exam (ESE):50</p>	<p>Two section A&B Section A :Q1 Objective 5*1=5 Marks Q2 Short answer type-5*4=20 Section B : Descriptive answer type qts 1 out of 2frm each- 10*1=10 Marks</p>	
<p><i>Signature of Convener & Members (CBoS)</i></p>		

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