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Pimpri
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University, Pune

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Pimpri Chinchwad Education Trust's

Pimpri Chinchwad University

SCHOOL OF SCIENCES

(Established under Maharashtra Act No V of 2023)
Sate, Pune - 412 106. Maharashtra, India

B.Sc - Nutrition & Dietetics

(BATCH : 2024-2028)

EFFECTIVE FROM 2024-25 ACADEMIC YEAR

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Sathe, Pune - 412106

PCET's Pimpri Chinchwad University
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Curriculum Structure

B. Sc Nutrition and Dietetics

(2024-2028)

School of Sciences

Effective fromAcademic Year 2024-25

Program Structure

Preamble:

We, at Pimpri Chinchwad University offer the Bachelor of Science in Nutrition and Dietetics program to provide students with a comprehensive education in the science and practice of nutrition and dietetics. Our mission is to prepare graduates who are competent, compassionate, and committed to promoting health and wellness through evidence-based practices.

The B.Sc. in Nutrition and Dietetics program integrates knowledge from various disciplines such as biochemistry, physiology, microbiology, psychology, and sociology to provide a holistic understanding of the role of nutrition in health and disease. The curriculum includes courses in human nutrition, food science, community nutrition, therapeutic diets, and research methods. Students will also have opportunities to gain practical experience through internships, clinical rotations, and community outreach programs.

Our program aims to develop students' critical thinking, communication, and leadership skills to enable them to work effectively in diverse settings such as hospitals, clinics, schools, research institutions, and public health agencies. Graduates of our program will be able to apply their knowledge and skills to assess and design nutrition interventions, develop and implement nutrition education programs, and promote policies that support healthy eating habits.

We are committed to providing a supportive and inclusive learning environment that values diversity, equity, and inclusion. Our faculty members are dedicated to excellence in teaching, research, and service, and are actively engaged in advancing the field of nutrition and dietetics through scholarly activities and professional organizations. We invite students who share our passion for nutrition and dietetics to join our program and embark on a journey of learning and growth that will prepare them for rewarding careers and lifelong learning.

Vision and Mission of Program:

Vision

Our vision for the B.Sc. in Nutrition and Dietetics is to empower students with the knowledge and skills to become leading experts in the field of nutrition and dietetics. Our program aims to produce graduates who are dedicated to improving the health and well-being of individuals, communities, and the environment through evidence-based nutrition and dietetic practices.

Mission

- Our mission for the B.Sc. in Nutrition and Dietetics is to provide a rigorous, engaging, and inclusive education that prepares students to become competent, compassionate, and ethical nutrition and dietetic professionals.

Program Educational Objectives:

1. To provide students with knowledge and skills to become leading experts in the field of nutrition and dietetics
2. To provide an innovative and comprehensive curriculum that integrates theoretical knowledge with practical experience, research opportunities, and professional development T
3. To groom the student's overall personality for professional growth.
4. To inculcate values and ethics among the students and making them aware about their social commitments.

Program Outcome

On Successful Completion of Program students will be able to:

1. Demonstrate a comprehensive understanding of the basic principles of nutrition and dietetics, including nutrient metabolism, food composition, and dietary guidelines.
2. Apply knowledge of food and nutrition to evaluate and design personalized dietary plans for individuals with diverse nutritional needs and health conditions.
3. Demonstrate proficiency in food service management and food safety, including the selection, preparation, and distribution of food in various settings.
4. Conduct evidence-based research and critically evaluate scientific literature related to nutrition and dietetics.
5. Demonstrate effective communication and interpersonal skills to educate and counsel individuals and groups on healthy eating habits and nutrition-related behaviors.
6. Analyze and evaluate the social, cultural, and environmental factors that influence food choices and dietary patterns.
7. Apply ethical and professional standards in all aspects of the nutrition and dietetics practice.
8. Collaborate with interdisciplinary healthcare teams to provide comprehensive nutrition care and management for patients with complex medical conditions.
9. Understand the importance of lifelong learning and engage in ongoing professional development to remain current with emerging trends and best practices in the field.
10. Demonstrate leadership skills and contribute to the promotion of public health through advocacy and community-based initiatives.

Program Specific Outcomes (PSOs):

1. Students will understand the scientific foundation of human nutrition, covering macro and micronutrients' roles in health, disease, and metabolic processes.
2. Students will possess skills to assess nutritional status, analyze dietary intake, and recognize nutrition-related risks using appropriate tools and methods.
3. Students be proficient in designing and implementing tailored nutrition interventions, conducting research, and communicating effectively with diverse audiences while upholding ethical standards.

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Curriculum Framework for B.Sc Nutrition and Dietetics

Sr. No.	Type of course	Abbreviations
1	Major	**MAJM**
2	Minor	**MIN**
3	Open Electives	**OE**
4	Ability Enhancement Courses	**AEC**
5	Skill Enhancement Courses	**SEC**
6	Vocational Skill Course	**VSC**
7	Summer Internship/ On Job Training	**OJT**
8	Project	**PROJ**
9	Field Project	**FP**
10	Indian Knowledge System	**IKS**
11	Community Engagement Program	**CEP**
12	Value Education Course	**VEC**

		BSc Nutrition and Dietetics			BSc Honor's Nutrition and Dietetics		
Sr. No.	**Type of course**	**No. of Courses**	**Total Credits**		**No. of Courses**	**Total Credits**	
			No	**%**		**No**	**%**
1	Major	**34**	**91**	**72.22**	**47**	**113**	**67.6**
2	Minor	**5**	**10**	**5.98**	**5**	**10**	**5.98**
3	Open Electives	**3**	**6**	**3.59**	**3**	**6**	**3.59**
4	Ability Enhancement Courses(Audit Courses)	**6**	-	-	**6**	-	-
5	Skill Enhancement Courses	**6**	**9**	**5.38**	**6**	**9**	**5.38**
6	Vocational Skill Course	**1**	**3**	**1.79**	**2**	**3**	**1.79**
7	Summer Internship/On Job Training	**1**	**6**	**4.76**	**2**	**18**	**10.77**
8	Field Project	**1**	**4**	**2.38**	**2**	**8**	**4.79**
9	Indian Knowledge System(Audit Courses)	**2**	-	-	**2**	-	-
10	Value Education Course (Audit Courses)	**3**	-	-	**3**	-	-
	Total	**62**	**126**	**100.0**	**78**	**167**	**100.0**

CREDIT DISTRIBUTION: SEMESTER WISE

Sr. No.	**Type of course**	**No. of Credits/Semester**								**Total**
		I	**II**	**III**	**IV**	**V**	**VI**	**VII**	**VIII**	
1	Major	17	15	7	18	21	13	16	6	**113**
2	Minor Stream	-	2	2	2	2	2	-	-	**10**
3	Open Electives	2	2	2	-	-	-			**6**
4	Ability Enhancement Courses (Audit course)	2	2	2	2	2	2			-
5	Skill Enhancement Courses	1	1	5	-	-	2			**9**
6	Vocational Skill Course	-	-	-	-	2	-		3	**3**
7	Summer Internship/On Job Training						6		12	**18**
8	Field Project			4				4		**8**
9	Indian Knowledge System (Audit Course)		1		1					-
12	Value Education Course			1			1			-
Total		20	20	20	20	23	23	20	21	**167**

BSc (Nutrition and Dietetics) Curriculum Structure Semester I

		Semester – I	Teaching Scheme					Evaluation Scheme			
Course Code	**Category**	**Course Name**	**Th**	**Tut**	**PR**	**Hrs.**	**Cr**	**CIA**	**ESA**	**PR/OR**	**Total**
UBSND101	**MAJM**	Fundamentals of Human Nutrition	4	-		4	4	40	60		100
UBSND 102	**MAJM**	Fundamentals of Human Nutrition-Lab			1	2	1	25		25	50
UBSND103	MAJM	Basics of Human Anatomy-ND	4	0	0	4	4	40	60		100
UBSND104	**MAJM**	Community and Public Health Nutrition	3	0		3	3	40	60		100
UBSND105	**MAJM**	Community and Public Health Nutrition-lab			1	2	1	25		25	50
UBSND106	**MAJM**	Essentials of Food Science	3		-	3	3	40	60		100
UBSND107	**MAJM**	Essentials of Food Science-Lab	-		1	2	1	25		25	50
UBSCP 107/UBSND 108	**OE**	Open Elective I	2			2	2	50			50
UBSND 109	**SEC**	Basics of Computer Applications-ND			1	2	1	25		25	50
ACUHV101	**AC**	UHV I: Professional Ethics	2			2		50			50
UEG 101	**AEC**	Modern Grammer and usage	2			2	-	50			50
Total			**20**		**4**	**28**	**20**	**410**	**240**	**100**	**750**

Open Elective I

Course Code	**Course Type**	Subject name
UBSCP 107	**OE**	Food Psychology
UBSND 108	**OE**	Understanding Fitness

Abbreviations: Course Abbreviation; Th = Theory , Tut = Tutorial, Pr = Practical , Hrs = Hours , Cr = Credits ; CIA = Continuous Internal Assessment , ESA = End Semester Assessment , PR = Practical Exam , OR= Oral Exa

BSc (Nutrition and Dietetics) Curriculum Structure Semester II

		Semester – II	Teaching Scheme					Evaluation Scheme			
Course Code	**Category**	**Course Name**	**Th**	**Tut**	**PR**	**Hrs.**	**Cr**	**CIA**	**ESA**	**PR/OR**	**Total**
UBSND 110	**MAJM**	Nutrition and Metabolism	3		-		3	40	60		100
UBSND 111	**MAJM**	Nutrition and Metabolism-LAB			1	2	1	25		25	50
UBSND 112	**MAJM**	Basics of Human Physiology	4			4	4	40	60		100
UBSND 113	**MAJM**	Introduction to Nutritional Biochemistry	3	-		3	3	40	60		100
UBSND 114	**MAJM**	Introduction to Nutritional Biochemistry-LAB			1	2	1	25		25	50
UBSND 115	**MAJM**	Diet and Disease Management	2				2	20	30		
UBSND 116	**MAJM**	Diet and Disease Management-LAB		-	1	2	1	25		25	
UBSND 117/ UBSCP 114	**OE**	Open Elective-II	2			2	2	50			
	MIN	Minor I	2	-	-	2	2	20	30		100
UBSND 118	**SEC**	Sales, Negations and Conflict Mgt; ND	1	-		1	1	50			
UEG 102	**AEC**	Spoken English	2	-	-	2	-	50			50
ACIKSP101	**IKS**	IKS;IndianHealth Systems	1	-	-	1	-	50			50
Total			**20**	**1**	**3**	**21**	**20**	**435**	**240**	**75**	**600**

Open Elective II

Course Code	**Course Type**	Subject name
UBSND 117	**OE**	Tools of Nutritional Assessment
UBSCP114	**OE**	Role of Mindfulness and Counselling in Psychology

Abbreviations: Course Abbreviation; Th = Theory , Tut = Tutorial, Pr = Practical , Hrs = Hours , Cr = Credits ; CIA = Continuous Internal Assessment , ESA = End Semester Assessment , PR = Practical Exam , OR= Oral Exam

Exit Policy

UG Certificate in BSc Nutrition and Dietetics: Students who opt to exit after completion of the first year and have scored required credits offered by the school in the program structure will be awarded a UG certificate in Nutrition and Dietetics, provided they must earn additional credits during the summer vacation of the first year.

First Year														
Course Code	Course Name	Course Type	Teaching Scheme						Assessment Scheme					
									Theory		OR/PR			
			Th	Pr	Tut	Credit	Hrs		CIA	ESA	CIA	ESA	Total	
UCEXND101	Prog. Spec. Sub/MOOCs	VSC	2	-		2	2		-	-	50		50	
UCEXND102	Project	VSC	-	2		2	4		-	-	50		50	

***Project- In house/ Sponsored/ Case Study/ Field work**

COURSE CURRICULUM

Course Contents/Syllabus:

Name of the Program:		**BSc ND**		**Semester : 2**		**Level: UG**	
Course Name		**Basics of Diet Planning**		**Course Code/ Course Type**		UCEXND 101/VSC	
		Project: N.D					
Course Pattern		**2024**		**Version**		1.0	
Teaching Scheme					**Assessment Scheme**		
Theory	**Practical**	**Tutorial**	**Total Credits**	**Hours**	**CIA (Continuous Internal Assessment)**	**ESA (End Semester Assessment)**	**Practical/Oral**
2	-	-	-	2	50	-	-
Pre-Requisite:							
Course Objectives (CO):		The objectives of (**Basics of Diet Planning**) are: 1. To recall diet plans for a variety of personal and professional businesses. 2. To recognize and Identify and evaluate various health coaching to improve client's long-term eating habits 3. To Compare and contrast a variety of nutrition principals, menu plans, preparation techniques, and specialized dietary plans 4. To analyze and demonstrate the understanding of food costing and diet pricing 5. To Design and create Menu Plan and develop meal and menu plans based on seasonality of ingredients.					
Course Learning Outcomes (CLO):		Students would be able to: 1. Students will be able to identify diet plans for a variety of personal and professional businesses. 2. Explain the various health coaching to improve client's long-term eating habits 3. Apply knowledge of nutrition principals, diet plans, preparation techniques, and specialized dietary plans 4. Analyze data and demonstrate the understanding of food costing and menu pricing 5. Evaluate the create Menu Plan and develop diet plans based on seasonality of ingredients.					

(All the units carry equal weightage in Summative Assessment and equal engagement)

Descriptors/Topics	**CLO**	**Hours**
UNIT I		
Introduction, factors influencing on diet planning, signs of good nutritional status, Food Guide Pyramid, guidelines of good health, Role of a dietician in a hospital and community, team approach to nutritional care, ethical code and responsibility.	**CLO 1**	**6**
UNIT II		
Nutritional status, Dietetics, Balanced diet, Malnutrition, Energy (Units of energy –	**CLO 2**	**6**

Joule, Kilocalorie). Recommended dietary allowances for Indians, Factors affecting, uses of RDA, Calorific Value of food.		
UNIT III		
Determining energy units, translating RDA into daily food intake B.M.R: Definition, factors affecting B.M.R. and Total Energy Requirement (Calculation of energy of individuals).	**CLO 3**	**6**
UNIT IV		
Calculation of IBW,BMI, Portion control and Exchange Groups	**CLO4**	**6**
UNIT V		
Diet planning and planning Nutrition Education program	**CLO 5**	**6**
Total		**30**

Learning resources

Text Books:

1. Textbook of Food & Nutrition, Amrita Kachhawa, Vardhan Publishers & Distributors. 4. Handbook of Food and Nutrition by Dr.Swaminathan (by The Bangalore press)
2. Textbook of human nutrition, S Das, Academic publishers.
3. Fundamentals Of Foods, Nutrition And Diet Therapy 6Th Edition 2012 by Mudambi, SumatiR,Rajagopal, MV, New Age International (P) Ltd Publishers
5. Textbook of Nutrition and Dietetics (Sharda Gupta, Santosh Jain Passi, Rama Seth, RanjanaMahna, Seema Puri, Kumud Khanna)Elite Publishing House Pvt. Ltd.
4. Handbook of Food and Nutrition by Dr.Swaminathan (by The Bangalore press)

Reference Book:

6. Textbook of Human Nutrition 4 Edition, by Bamji M S (Author)

Online Resources/E-Learning Resources

- https://onenet.savethechildren.net/whatwedo/me/Pages/default.aspx
- http://preval.org/documentos/00473.pdf
- http://web.undp.org/evaluation/handbook/

BSc (Nutrition and Dietetics) Curriculum Structure Semester III

		Semester – III	Teaching Scheme					Evaluation Scheme			
Course Code	**Category**	**Course Name**	**Th**	**Tut**	**PR**	**Hrs.**	**Cr**	**CIA**	**ESA**	**PR/ OR**	**Total**
UBSND 201	**MAJM**	Essentials of Meal Planning	3	-		3	3	40	60		100
UBSND 202	**MAJM**	Essentials of Meal Planning-LAB			1	2	1	25		25	50
UBSND 203	**MAJM**	Nutrition in Life Stages-Conception till Childhood	3	-		3	3	40	60		100
UBSCP 205/ UBSND 204	**MAJM-OE**	Open Elective – III	2			2	2	50			50
	MIN	Minor II	2			2	2	20	30		50
UBSND 205	**SEC**	Post Harvest Management of Foods	2		-	2	2	20	30		50
UBSND 205	**SEC**	Post Harvest Management of Foods-LAB			1	2	1	25		25	50
UBSND 206	**SEC**	Introduction to Biostatistics; ND	2	-	-	2	2	20	30		50
ACUHV201	**VEC**	UHV-II Understanding Harmony	1			1	-	50			50
UFLI 201	**AEC**	Foreign Language I	2	-		2	-	50			50
UBSND 207	**FP**	Field Project-Nutrition and Dietetics		-		6	4	50		50	100
Total			**17**	**0**	**2**	**27**	**20**	**390**	**210**	**100**	**700**

Open Elective III

Course Code	**Course Type**	Subject name
UBSCP 205	**OE**	Gender Equality and Equity
UBSND 204	**OE**	Growth Monitoring and Health Policies

Foreign language I

Course Code	Course Type	Subject name
UFLI 201A	AEC	Foreign language I - German
UFLI 201 B	AEC	Foreign language I - Japanese

		Semester – IV	Teaching Scheme					Evaluation Scheme			
Course Code	**Category**	**Course Name**	**Th**	**Tut**	**PR**	**Hrs.**	**Cr**	**CIA**	**ESA**	**PR/ OR**	**Total**
UBSND 208	MAJM	Metabolic and Lifestyle Disorders	3	-	-	3	3	40	60		100
UBSND 209	MAJM	Metabolic and Lifestyle Disorders- Lab			1	2	1	25		25	50
UBSND 210	MAJM	Nutrition in Life Stages- Adolescence till Geriatrics	3	-	-	3	3	40	60		100
UBSND 211	MAJM	Food Microbiology	3	-		3	3	40	60		100
UBSND 212	MAJM	Food Microbiology-LAB			1	2	1	25		25	50
UBSND 213	MAJM	Maternal and Child Nutrition	2		-	2	2	20	30		50
UBSND 214	MAJM	Personal and Fitness Training	2	-	-	2	2	20	30		50
UBSND 215	MAJM	Personal and Fitness Training-LAB			1	2	1	25		25	50
UBSND 216	MAJM	Fad Diets; Types and Facts	2			2	2	20	30		50
	MIN	Minor III	2	-		2	2	20	30		50
UFLII 202	AEC	Foreign Language II	2	-		2	-	50			50
ACCOI201	IKS – AC	Constitution of India	1	-		1	-	50			50
Total			**20**	**0**	**3**	**26**	**20**	**375**	**300**	**75**	**750**

Foreign Language II

Course Code	Course Type	Subject name
UFLII 202A	AEC	Foreign language II - German
UFLII 202 B	AEC	Foreign language II - Japanese

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Exit Policy

UG Diploma in BSc Nutrition and Dietetics: Students who opt to exit after completion of the second year and have scored required credits offered by the school in the program structure will be awarded a UG diploma in Nutrition and Dietetics, provided they must earn additional credits during the summer vacation of the second year.

Second Year													
Course Code	Course Name	Course Type	Teaching Scheme					Assessment Scheme					
								Theory		OR/PR			
			Th	Pr	Tut	Credit	Hrs	CIA	ESA	CIA	ESA	Total	
UDIEXND201	Prog. Spec. Sub./MOOCs	VSC	2	-		2	2	-	-	50		50	
UDIEXND202	Project/ Internship	VSC	-	4		4	8	-	-	50	50	100	

***Project- In house/ Sponsored/ Case Study/ Field work**

BSc (Nutrition and Dietetics) Curriculum Structure Semester V

		Semester – V	Teaching Scheme					Evaluation Scheme			
Course Code	**Category**	**Course Name**	**Th**	**Tut**	**PR**	**Hrs.**	**Cr**	**CIA**	**ESA**	**PR/OR**	**Total**
UBSND 301	**MAJM**	Basics of Critical Care and Illness	4	-	-	4	4	40	60		100
UBSND 302	**MAJM**	Clinical and Therapeutic Nutrition	3	-		3	3	40	60		100
UBSND 303	**MAJM**	Clinical and Therapeutic Nutrition-LAB			1	2	1	25		25	50
UBSND 304	**MAJM**	Functional Foods and Nutraceuticals	3	-		3	3	40	60		100
UBSND 305	**MAJM**	Food Service Management Systems	2	-		2	2	20	30		50
UBSND 306	**MAJM**	Food Service Management Systems-LAB			2	4	2	25		25	50
UBSND 307	**MAJM**	Introduction to Food Quality Control Methods	2	1		3	3	40	60		100
UBSND 308	**MAJE**	Elective I	3	-		3	3	40	60		100
	MIN	Minor IV	2	-	-	2	2	20	30		50
ACALR301	**VSC**	Aptitude and logical reasoning	2				-	50			50
UFLIII 301	**AEC**	Foreign Language III	2	-		2	-	50			50
Total			**23**	**01**	**3**	**28**	**23**	**390**	**360**	**50**	**800**

Elective-I

Course Code	**Course Type**	Subject name
UBSND 308 A	**MAJE**	Introduction to Nutrition and Genes
UBSND 308 B	**MAJE**	Dietary Management in Eating Disorders

Foreign Language III

Course Code	**Course Type**	Subject name
UFLIII 301A	**AEC**	Foreign language III - German
UFLIII 301 B	**AEC**	Foreign language III - Japanese

		Semester – VI	Teaching Scheme					Evaluation Scheme			
Course Code	**Category**	**Course Name**	**Th**	**Tut**	**PR**	**Hrs.**	**Cr**	**CIA**	**ESA**	**PR/OR**	**Total**
UBSND 309	**MAJM**	Introduction to Gut Health	3	-		3	3	40	60		100
UBSND 310	**MAJM**	Weight Management and Bariatrics	2	-		2	2	20	30		50
UBSND 311	**MAJM**	Weight Management and Bariatrics-LAB			1	2	1	25		25	50
UBSND 312	**MAJM**	Food Preservation	3	-	-	3	3	40	60		100
UBSND 313	**MAJM**	Food Preservation-LAB			1	2	1	25		25	50
UBSND 314	**MAJE**	Elective II	3	-		3	3	40	60		100
	MIN	Minor IV	2	-	-	2	2	20	30		50
UBSND 315	**SEC**	Understanding Alternative Medicines	2	-		2	2	20	30		50
ACEVS301	**VEC**	EVS	1	-	-	1	-	50			50
UFLIV 302	**AEC**	Foreign Language IV	2	-		2	-	50			50
UBSND 316	**INTR**	Summer Internship; Nutrition and Dietetics				6	6	100		100	200
Total			**18**	**00**	**2**	**28**	**23**	**430**	**270**	**150**	**850**

UBSND 314- Elective II

Course Code	**Course Type**	Subject name
UBSND 314 A	**MAJE**	Functional Bowel Disorders
UBSND 314 B	**MAJE**	Diabetes Management and Care

Foreign Language IV

Course Code	Course Type	Subject name
UFLIV 302 A	AEC	Foreign language IV - German
UFLIV 302 B	AEC	Foreign language IV – Japanese

BSc (Nutrition and Dietetics) Curriculum Structure Semester VII

		Semester – VII	Teaching Scheme					Evaluation Scheme			
Course Code	**Category**	**Course Name**	**Th**	**Tut**	**PR**	**Hrs.**	**Cr**	**CIA**	**ESA**	**PR/ OR**	**Total**
UBSND 401	MAJM	Understanding Global Nutrition	3	-	-	3	3	40	60		100
UBSND 402	MAJM	Understanding Global Nutrition-LAB			1	2	1	25		25	50
UBSND 403	MAJM	Scientific Writing and Research Methods	2	1	-	3	3	40	60		100
UBSND 404	MAJM	Food Laws and Regulations	3	-	-	3	3	40	60		100
UBSND 405	MAJM	Diet and Sports	3	-	-	3	3	40	60		100
UBSND 406	MAJM	Product Development and formulations	2	-	-	2	2	20	30		50
UBSND 407	MAJM	Product Development and formulations-LAB			1	2	1	25		25	50
UBSND 408	FP	Research Project-Nutrition and Dietetics		-		6	4	50		50	100
Total			**13**	**1**	**2**	**24**	**20**	**280**	**270**	**100**	**650**

Abbreviations: Course Abbreviation; Th = Theory , Tut = Tutorial, Pr = Practical , Hrs = Hours , Cr = Credits ; CIA = Continuous Internal Assessment , ESA = End Semester Assessment , PR = Practical Exam , OR= Oral E

BSc (Nutrition and Dietetics) Curriculum Structure Semester VIII

		Semester – VIII	Teaching Scheme					Evaluation Scheme			
Course Code	**Category**	**Course Name**	**Th**	**Tut**	**PR**	**Hrs.**	**Cr**	**CIA**	**ESA**	**PR/ OR**	**Total**
UBSND 409	**MAJM**	Palliative and Domiciliary Care-Nutrition and Dietetics	2	-	-	2	2	50			50
UBSND 410	**VSC-MOOC**	IPR-Online Certification	3	-	-	3	3	50			50
UBSND 411	**MAJM**	Case study Portfolio; Nutrition and Dietetics		-	-	4	4	50		50	100
UBSND 412	**INTR**	OJT- Thesis; Nutrition and Dietetics	-	-		6	12	200		200	200
Total			**5**	**0**	**0**	**15**	**21**	**350**		**250**	**400**

Abbreviations: Course Abbreviation; Th = Theory , Tut = Tutorial, Pr = Practical , Hrs = Hours , Cr = Credits ; CIA = Continuous Internal Assessment , ESA = End Semester Assessment , PR = Practical Exam , OR= Oral Exam

Course Code Nomenclature:

Digit Number	Digit	Meaning
1	B	Bachelor
2	N	Nutrition
3	D	Dietetics
4	1 to 8	1- Semester 1, 2- Semester 2, 3- Semester 3, 4- Semester 4, 5- Semester 5, 6- Semester 6, 7- Semester 7, 8- Semester 8
5	Type of Course, 1 to 8	1- MAJMor, 2 - Minor, 3 - Multidisciplinary / Open Electives, 4 - Ability Enhancement Courses, 5 - Skill Enhancement Courses, 6 - Value Added Courses, 7 - Summer Internship, 8 – Project
6 and 7	01,02,03, -----	Subject Code

MINOR SUBJECTS

Program Outcomes

Programme Outcomes (POs):
PO 1: Engineering knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
PO2: Problem analysis: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
PO3: Design/development of solutions: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
PO4: Conduct investigations of complex problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
PO5: Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex engineering activities with an understanding of the limitations.
PO6: The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
PO7: Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
PO8: Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
PO9: Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
PO10: Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
PO11: Project management and finance: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
PO12: Life-long learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

Course Structure

	List of Minor Courses	

Web Development (WD)

Offering School: School of Engineering & Technology (ET)

Course Code	Name of Course	Teaching Scheme			Evaluation Scheme	
		Sem	Credits	Hours	CIA	ESA
UETWD101	WD Minor1: Introduction of HTML	# II/ *IV	2	2	20	30
UETWD102	WD Minor2: Getting started with JavaScript	# III/ *V	2	2	20	30
UETWD103	WD Minor3: Server-side Programming with Node.js	# IV/*VI	2	2	20	30
UETWD104	WD Minor4: Front-end Development with React & Type Script	# V/*VII	2	2	20	30
UETWD105	WD Minor5: back-end frameworks - Django, Ruby on Rails,	# VI/*VIII	2	2	20	30

Robotics Process Automation (RP)

Offering School: School of Engineering & Technology (ET)

Course Code	Name of Course	Teaching Scheme			Evaluation Scheme	
		Sem	Credits	Hours	CIA	ESA
UETRP101	RP Minor1: Basics of Robotics Process Automation	# II/ *IV	2	2	20	30
UETRP102	RP Minor2: Fundamentals of RPA Business Analysis	# III/ *V	2	2	20	30
UETRP103	RP Minor3: Automation Techniques in RPA	# IV/*VI	2	2	20	30
UETRP104	RP Minor4: Future of RPA with Business	# V/*VII	2	2	20	30

	Automation					
UETRP105	RP Minor5: RPA Tool	# VI/*VIII	2	2	20	30

Artificial intelligence & Machine Learning (ML)

Offering School: School of Engineering & Technology (ET)

Sr.no	Name of Course	Teaching Scheme			Evaluation Scheme	
		Sem	Credits	Hours	CIA	ESA
UETML101	ML Minor1: Artificial Intelligence	# II/ *IV	2	2	20	30
UETML102	ML Minor2: Machine Learning	# III/ *V	2	2	20	30
UETML103	ML Minor3: Natural Language Processing	# IV/*VI	2	2	20	30
UETML104	ML Minor4: Optimization Techniques	# V/*VII	2	2	20	30
UETML105	ML Minor5: Deep Learning For Computer Vision	# VI/*VIII	2	2	20	30

Data Science (DS)

Offering School: School of Engineering & Technology (ET)

Sr.no	Name of Course	Teaching Scheme			Evaluation Scheme	
		Sem	Credits	Hours	CIA	ESA
UETDS101	DS Minor1: Applied Data Science With Python	# II/ *IV	2	2	20	30
UETDS102	DS Minor2: Data Visualization With Tableau	# III/ *V	2	2	20	30
UETDS103	DS Minor3: Business Analytics	# IV/*VI	2	2	20	30
UETDS104	DS Minor4: Data Analytics	# V/*VII	2	2	20	30
UETDS105	DS Minor5: Generative AI	# VI/*VIII	2	2	20	30

List of Minor Courses

Media Communications

Offering School: School of media and communications studies

Course Code	Name of Course	Teaching Scheme			Evaluation Scheme	
		Sem	Credits	Hours	CIA	ESA

UMSMM101	MM Minor1: Literary Study	# II/ *IV	2	2	20	30
UMSMM102	MM Minor2: Digital Media Production	# III/ *V	2	2	20	30
UMSMM103	MM Minor3: Photography	# IV/*VI	2	2	20	30
UMSMM104	MM Minor4: Performing Arts - Theater	# V/*VII	2	2	20	30
UMSMM105	MM Minor5: Film Studies	# VI/*VIII	2	2	20	30

Psychology (PSY)

Offering School: School of science

Course Code	Name of Course	Teaching Scheme			Evaluation Scheme	
		Sem	Credits	Hours	CIA	ESA
USCPSY101	PSY Minor1: Introductory Psychology	# II/ *IV	2	2	20	30
USCPSY102	PSY Minor2: Foundations of Social Psychology	# III/ *V	2	2	20	30
USCPSY103	PSY Minor3: Theories of Personality Development	# IV/*VI	2	2	20	30
USCPSY104	PSY Minor4: Industrial Psychology	# V/*VII	2	2	20	30
USCPSY105	PSY Minor5: Mindfulness and Mental Health	# VI/*VIII	2	2	20	30

Nutrition (NUT)

Offering School: School of science

Course Code	Name of Course	Teaching Scheme			Evaluation Scheme	
		Sem	Credits	Hours	CIA	ESA
USCNUT101	NUT Minor1: Human Nutrition	# II/ *IV	2	2	20	30
USCNUT102	NUT Minor2: Lifestyle Management	# III/ *V	2	2	20	30
USCNUT103	NUT Minor3: Introduction to Weight Management	# IV/*VI	2	2	20	30
USCNUT104	NUT Minor4: Food Quality and Management	# V/*VII	2	2	20	30
USCNUT105	NUT Minor5: Novel Foods and Application	# VI/*VIII	2	2	20	30

Design Thinking and Methodologies (DM)

Offering School: Pune Design School (SD)

Course Code	Name of Course	Teaching Scheme	Evaluation Scheme

		Sem	Credits	Hours	CIA	ESA
USDDM101	DM Minor1: Design Thinking	# II/ *IV	2	2	20	30
USDDM102	DM Minor2: Brand Identity Design	# III/ *V	2	2	20	30
USDDM103	DM Minor3: Digital tools for 2D design	# IV/*VI	2	2	20	30
USDDM104	DM Minor4: Physical model making/ Prototyping	# V/*VII	2	2	20	30
USDDM105	DM Minor5: Digital Tools for 3D design	# VI/*VIII	2	2	20	30

Economics & Finance (FE)

Offering School: School of Management (SM)

Course Code	Name of Course	Teaching Scheme			Evaluation Scheme	
		Sem	Credits	Hours	CIA	ESA
USMFE101	FE Minor1: Micro-economics	# II/ *IV	2	2	20	30
USMFE102	FE Minor2: Fundamentals of Accounting	# III/ *V	2	2	20	30
USMFE103	FE Minor3: Principles of Finance	# IV/*VI	2	2	20	30
USMFE104	FE Minor4: Cost anfd Management Accounting	# V/*VII	2	2	20	30
USMFE105	FE Minor5: Macro economics	# VI/*VIII	2	2	20	30

Entrepreneurship and Innovations (EI)

Offering School: School of Management (SM)

Course Code	Name of Course	Teaching Scheme			Evaluation Scheme	
		Sem	Credits	Hours	CIA	ESA
USMEI101	EI Minor1: Entrepreneurship-New venture Development	# II/ *IV	2	2	20	30
USMEI102	EI Minor2: Rural Entrepreneurship	# III/ *V	2	2	20	30
USMEI103	EI Minor3: Design Thinking	# IV/*VI	2	2	20	30
USMEI104	EI Minor4: Institutional and Legal framework for Startups and small Businesses	# V/*VII	2	2	20	30
USMEI105	EI Minor5: Managing creativity and learning organizations	# VI/*VIII	2	2	20	30

Drugs & Healthcare (DH)

Offering School: School of Pharmacy (SP)

Course Code	Name of Course	Teaching Scheme			Evaluation Scheme	
		Sem	Credits	Hours	CIA	ESA
USPDH101	DH Minor1: Health and hygiene	# II/ *IV	2	2	20	30
USPDH102	DH Minor2: Know your drugs	# III/ *V	2	2	20	30
USPDH103	DH Minor3: Complementary and alternative medicine	# IV/*VI	2	2	20	30
USPDH104	DH Minor4: Drug Discovery	# V/*VII	2	2	20	30
USPDH105	DH Minor5: Forensic Science	# VI/*VIII	2	2	20	30

Software Application Design and Development (AD)

Offering School: School of Engineering and Technology (Computer Applications)

Course Code	Name of Course	Teaching Scheme			Evaluation Scheme	
		Sem	Credits	Hours	CIA	ESA
UETAD101	AD Minor1: System Analysis and Design	# II/ *IV	2	2	20	30
UETAD102	AD Minor2: User Experience and Design	# III/ *V	2	2	20	30
UETAD103	AD Minor3: Introduction to GitHub.	# IV/*VI	2	2	20	30
UETAD104	AD Minor4: Introduction to Gaming Applications.	# V/*VII	2	2	20	30
UETAD105	AD Minor5: Mobile Application Development	# VI/*VIII	2	2	20	30

Cyber Security (CS)

Offering School: School of Engineering and Technology (Computer Applications)

Course Code	Name of Course	Teaching Scheme			Evaluation Scheme	
		Sem	Credits	Hours	CIA	ESA
UETCS101	CS Minor1: Cyber Ethics, Cyber Law and Cyber Policy	# II/ *IV	2	2	20	30
UETCS102	CS Minor2: Introduction to Cryptography	# III/ *V	2	2	20	30
UETCS103	CS Minor3: Social Media Security.	# IV/*VI	2	2	20	30

UETCS104	CS Minor4: Introduction to Block Chain.	# V/*VII	2	2	20	30
UETCS105	CS Minor5: Data Security & Privacy.	# VI/*VIII	2	2	20	30

English Literature (E)

Offering School: School of Liberal Arts (SL)

Course Code	Name of Course	Teaching Scheme			Evaluation Scheme	
		Sem	Credits	Hours	CIA	ESA
USLAE101	E Minor1: English for Competitive Examinations-I	# II/ *IV	2	2	20	30
USLAE102	E Minor2: English for Competitive Examinations-II	# III/ *V	2	2	20	30
USLAE103	E Minor3: English for Competitive Examinations-III	# IV/*VI	2	2	20	30
USLAE104	E Minor4: English for Competitive Examinations-IV	# V/*VII	2	2	20	30
USLAE105	E Minor5: English for Competitive Examinations-V	# VI/*VIII	2	2	20	30

English (E)

Offering School: School of Liberal Arts (SL)

Course Code	Name of Course	Teaching Scheme			Evaluation Scheme	
		Sem	Credits	Hours	CIA	ESA
USLAM101	Learning English With Shakespeare-Romeo and Juliet (Minor-I)	# II/ *IV	2	2	40	30
USLAM102	Learning English With Shakespeare-Hamlet (Minor-II)	# III/ *V	2	2	40	30

*** : Courses offered for B Tech, B Design**

#: Courses offered for B Sc, BBA, Media, and Management & Liberal Arts

Course Nomenclature

Course Title	Course Code	Name of Course
Web Development (WD)	UETWD101	WD Minor1: Introduction of HTML
	UETWD102	WD Minor2: Getting started with JavaScript
Robotics Process Automation (RP)	UETRP101	RP Minor1: Basics of Robotics Process Automation
	UETRP102	RP Minor2: Fundamentals of RPA Business Analysis
Artificial Intelligence & Machine Learning (AIML)	UETML101	ML Minor1: Artificial Intelligence
	UETML102	ML Minor2: Machine Learning
Data Science (DS)	UETDS101	DS Minor1: Applied Data Science With Python
	UETDS102	DS Minor2: Data Visualization With Tableau
Media Communications (MM)	UMSMM101	MM Minor1: Literary Study
	UMSMM102	MM Minor2: Digital Media Production
Psychology (PSY)	USCPSY101	PSY Minor1: Introductory Psychology
	USCPSY102	PSY Minor2: Foundations of Social Psychology
Nutrition (NUT)	USCNUT101	NUT Minor1: Human Nutrition
	USCNUT102	NUT Minor2: Lifestyle Management
Design Thinking Methodologies (DM)	USDDM101	DM Minor1: Design Thinking
	USDDM102	DM Minor2: Brand Identity Design
Economics and Finance (FE)	USMFE101	FE Minor1: Micro-economics
	USMFE102	FE Minor2: Fundamentals of Accounting
Entrepreneurship and Innovations (EI)	USMEI101	EI Minor1: Entrepreneurship-New venture Development
	USMEI102	EI Minor2: Rural Entrepreneurship
Drugs and Healthcare (DH)	USPDH101	DH Minor1: Health and hygiene
	USPDH102	DH Minor2: Know your drugs
Software Application Design and Development (AD)	UETAD101	AD Minor1: System Analysis and Design
	UETAD102	AD Minor2: User Experience and Design
Cyber Security	UETCS101	CS Minor1: Cyber Ethics, Cyber Law and Cyber Policy

(CS)	UETCS102	CS Minor2: Introduction to Cryptography
English Literature (EL)	USLAE101	E Minor1: English for Competitive Examinations-I
	USLAE102	E Minor2: English for Competitive Examinations-II
English (E)	USLAM101	E Minor 1: Learning English With Shakespeare-Romeo and Juliet
	USLAM102	E Minor2Learning English With Shakespeare-Hamlet (Minor-II)

SEMESTER - I

PROGRAM STRUCTURE

Course Curriculum

Name of the Program:	**B.Sc. Nutrition and Dietetics**		**Semester: 1**		**Level: UG**	
Course Name	**Fundamentals of Human Nutrition**		**Course Code/ Course Type**		UBSND 101/MAJM	
Course Pattern	**2024**		**Version**		1.1	
Teaching Scheme				**Assessment Scheme**		
Theory	**Practical**	**Tutorial**	**Total Credits**	**Hours**	**CIA (Continuous Internal Assessment)**	**ESA (End Semester Assessment)**	**Practical/Oral**
4	-	-	4	4	40	60	-
Pre-Requisite: 10+2, Science							
Course Objectives (CO):			The objectives of Fundamentals of Human Nutrition are: 1. To familiarize the students with the basics of Human Nutrition 2. Define essential macronutrients (carbohydrates, proteins, fats) and micronutrients (vitamins, minerals). 3. Identify the primary sources of each macronutrient and micronutrient in the diet. 4. Explain the process of digestion and absorption of nutrients in the human body. 5. Describe the role of different enzymes and hormones in nutrient metabolism.				
Course Learning Outcomes (CLO):			Students would be able to: 1. To demonstrate a deep understanding of the functions of essential nutrients 2. To critically evaluate dietary patterns and assess their impact on health and well-being, taking into account factors like age, gender, and activity level. 3. To apply fundamental principles of nutrition to create balanced and healthy meal plans for different individuals and specific dietary needs. 4. To develop strategies for promoting healthy eating habits and nutritional awareness within communities and organizations. 5. To critically evaluate nutrition-related information from various sources, distinguishing between evidence-based recommendations and misinformation.				

Course Contents/Syllabus:
(All the units carry equal weightage in Summative Assessment and equal engagement)

Descriptors/Topics	**CLO**	**Hours**
UNIT I		
Introduction to Human Nutrition: Meaning and Definition of Nutrition, Meaning of Balanced Diet, Importance of Nutrition in Daily Diet, Scope of Nutrition and Dietetics, Classification of Macros and Micros	**CLO 1**	**12**
UNIT II		

Water and Dietary Fiber: Functions and Role of Water, Introduction to Input and Output sources of Water in Diet, Daily Requirement and disorders related to water imbalance, Extracellular and Intracellular Water in the body and its role, Types of Dietary Fiber and their functions	**CLO 2**	**12**
UNIT III		
Introduction to Carbohydrates: Chemical structure and Classification of Carbohydrates, Sources of Carbohydrates and Requirement in the body, Introduction to Ketosis and Ketoacidosis, Functions of Carbohydrates, Artificial v/s Natural Zero Calorie sweeteners	**CLO3**	**12**
UNIT IV		
Introduction to Proteins: Chemical structure and Definition of Proteins, Classification of Proteins according to amino acid content, Nutritive value, Animal and Plant Protein, Biological value and Protein Efficiency Ratio (PER), Protein Quality, Functions of Proteins in the body, Requirement of Proteins and Protein Energy malnutrition	**CLO4**	**12**
UNIT V		
Introduction To Lipids: Definition and Chemical Structure of Lipids, Classification Of lipids according to sources, fatty acids, essential and non-essential, Functions of Lipids and Daily Requirements, Cholesterol Synthesis and Metabolism	**CLO5**	**12**
Total Hours		**60**

Learning resources:

Textbooks:

1. Essential of food & Nutrition –Vol. 1 M. Swaminathan, Bappco,Bangalore.
2. Human Nutrition and Dietetics –Davidson S. Passmore
3. Normal and Therapeutic Nutrition- Corinne. H.Robinson & Marilyn Lawler

Reference Books:

1. Nutrition- concepts and controversies- Eleanor Whitney –Eighth Edition (2000)
2. Basic principles of Nutrition- Seema Yadav, First edition (1997)
3. Essentials of Nutrition and Diet therapy -Sue Rodwell Williams, fifth edition, Times Mirror Mosby College Publishing, 1990.
4. Understanding Nutrition -Whitney P.N. and Roes S.R., West Publication Co, 1996.

Online Resources/E-Learning Resources

1.Nutrition, food security and livelihoods: Basic concepts (2015)

2. Nutritional status assessment and analysis (2007

Course Curriculum

Course Name		Fundamentals of Human Nutrition LAB		Course Code/ Course Type		UBSND 102/MAJM	
Course Pattern		2024		Version		1.0	
Teaching Scheme				Assessment Scheme			
Theory	Practical	Tutorial	Total Credits	Hours	CIA (Continuous Internal Assessment)	ESA (End Semester Assessment)	Practical/Oral
	1		1	2	25		25
Pre-Requisite: 12th Science Pass							
Course Objectives (CO):		The objectives of Fundamentals of Human Nutrition are: 1. To familiarize the students with the basics and fundamentals of Human nutrition 2. Define essential macronutrients (carbohydrates, proteins, fats) and micronutrients (vitamins, minerals). 3. Identify the primary sources of each macronutrient and micronutrient in the diet. 4. Explain the process of digestion and absorption of nutrients in the human body. 5. Describe the role of different enzymes and hormones in nutrient metabolism and their impact on health outcomes.					
Course Learning Outcomes (CLO):		Students would be able to: 1. Understand Nutrient Functions: Students would be able to demonstrate a deep understanding of the functions of essential nutrients, including carbohydrates, proteins, fats, vitamins, and minerals in the human body. 2. Evaluate Dietary Patterns: Students would be able to critically evaluate dietary patterns and assess their impact on health and well-being. 3. Apply Nutrition Principles: Upon completing the course, students would be able to apply fundamental principles of nutrition to create balanced and healthy meal plans for different individuals and specific dietary needs. 4. Analyze Nutritional Information: Students would be proficient in analyzing food labels, nutrient databases, and dietary guidelines to make informed choices regarding food consumption and dietary planning. 5. Assess Nutritional Needs: Graduates of the course would be able to calculate and assess the nutritional needs of individuals based on various factors, such as age, weight, and activity level and nutritional awareness within communities and organizations.					

(All the Practical's carry equal weightage in Summative Assessment and equal engagement)

S. No	Practical	Week Number	Details	CLO	Hours
1	Practical 1:	Week 1	Enlisting the various sources of macros and Micros in your own plating	CLO 1	2

2	Practical 2:	Week 2	Explain and draw the cycle of Water Input Output with sources in the body	CLO 1	2
3	Practical 3:	Week 3	Enlist various sources of Artificial and Natural sweeteners available in the market and analyze them according to their uses in day-to-day life	CLO 1	2
4	Practical 4:	Week 4	Formulate Antioxidant drinks and do their sensory analysis	CLO 2	2
5	Practical 5:	Week 5	Formulate and plan the animal v/s Plant proteins recipe and compare according to taste and protein content	CLO 1/2	2
6	Practical 6:	Week 6	Prepare at least two recipes using Plant and Animal Fat sources and enlist various fatty acids	CLO 2	2
7	Practical 7:	Week 7	Explain the roles and various sources of Essential fatty acids and make at least two healthy recipes for the same.	CLO 2	2
8	Practical 8:	Week 8	Classify minerals and vitamins and make two calcium and Iron rich recipes rich in fat soluble vitamins for pregnant/adolescent girl	CLO 3 and 4	2
9	Practical 9:	Week 9	Make a Probiotic Recipe which is also the source of dietary fiber for patient suffering from Diarrhea/Constipation	CLO 3 and 4	2
10	Practical 10:	Week 10	Enlisting the various sources of macros and Micros in your own plating	CLO 4	4
11	Practical 11:	Week 11	Explain and draw the cycle of Water Input Output with sources in the body	CLO 5	2
12	Practical 12:	Week 12	Survey and report writing	CLO 5	6
			Total Hours		**30**

Practical Plan

Learning resources

1. Essential of food & Nutrition –Vol. 1 M. Swaminathan, Bappco,Bangalore.
2. Human Nutrition and Dietetics –Davidson S. Passmore
3. Normal and Therapeutic Nutrition- Corinne. H.Robinson & Marilyn Lawler
4. Contemporary Nutrition - Gordon M. Wardlaw, Paul Insel et, al., (2000) Mosby,Chicago.
5. Nutrition- concepts and controversies- Eleanor Whitney –Eighth Edition (2000)

Reference books:

6. Basic principles of Nutrition- Seema Yadav, First edition (1997)
7. Essentials of Nutrition and Diet therapy -Sue Rodwell Williams, fifth edition, Times Mirror Mosby

College Publishing, 1990.
8. Understanding Nutrition -Whitney P.N. and Roes S.R., West Publication Co, 1996.

Online Resources/E-Learning Resources

1.Nutrition, food security and livelihoods: Basic concepts (2015)

2. Nutritional status assessment and analysis (2007)

Name of the Program:	BSc Nutrition and Dietetics				Semester		1
Course Name	Basics of Human Anatomy				Course Code		UBSND103/ MAJM
Course Pattern	2024				Version		1.0
Teaching Scheme					Assessment Scheme		
Theory	Practical	Tutorial	Total Credits	Hrs	CIA (Continuous Internal Assessment)	ESA (End Semester Assessment)	Practical/Oral
4			4	4	40	60	-

Pre-Requisite: 12th Science Pass

Course Objectives (CO):	The objectives of Basics of Human Anatomyare: 1. Explain the gross morphology, structure and functions of various organs of the human body. 2. Describe the various homeostatic mechanisms and their imbalances. 3. Identify the various tissues and organs of different systems of human body. 4. Perform the hematological tests like blood cell counts, hemoglobin estimation, bleeding/clotting time etc and also record blood pressure, heart rate, pulse and respiratory volume. 5. Appreciate coordinated working pattern of different and record organs of each system
Course Learning Outcomes (CLO):	Students would be able to: 1: To understand fundamental knowledge on the structure and functions of the various systems of the human body. 2: To understand both homeostatic mechanisms 3: Identify the various tissues and organs of different systems of human body. 4: To Identify and describe disorders or diseases in human body 5: To analyze hematological tests and record blood pressure, heart rate, pulse and respiratory volume.

Course Contents/Syllabus:
(All the units carry equal weightage in Summative Assessment and equal engagement

Descriptors/Topics	CLO	Hours
UNIT I		
Endocrinesystem: Classification of hormones, mechanism of hormone action, structure and functions of pituitary gland, thyroid gland, parathyroid gland, adrenal gland, pancreas, pineal gland, thymus and their disorders.	**CLO 1**	**12**
UNIT II		
Digestivesystem: Anatomyof GITract with special reference to anatomyand functions of stomach, (Acid production in the stomach, regulation of acid production through parasympatheticnervoussystem,pepsinroleinproteindigestion)smallintestine and large intestine, anatomyand functions of salivary glands, pancreas andliver,movementsof GIT,digestionandabsorptionofnutrientsand disorders of GIT. **Energetics:** FormationandroleofATP,CreatininePhosphateandBMR.	**CLO 2**	**12**
UNIT III		

Respiratorysystem, Urinarysystem: **Respiratorysystem**: Anatomyof respiratorysystem with special reference to anatomyof lungs,mechanism of respiration, regulation of respiration, Lung Volumes and capacities transport of respiratory gases, artificial respiration, and resuscitation methods. **Urinary system:** Anatomy of urinary tract with special reference to anatomy of kidney and nephrons, functions of kidney and urinary tract, physiology of urine formation, micturition reflex and role of kidneys in acid base balance, role of RAS in kidney and disorders of kidney.	**CLO 3**	**12**
UNIT IV		
Reproductivesystem: Anatomy of male and female reproductive system, Functions of male and female reproductive system, sex hormones, physiology of menstruation, fertilization, spermatogenesis, oogenesis, pregnancy and parturition **Introduction to genetics:** Chromosomes, genes and DNA, protein synthesis, genetic pattern of inheritance.	**CLO 4**	**12**
UNIT V		
Skeletal Systems: Anatomy, functions of skeletal system, bone classification, bone structure, Bone formation and development, joints and its types, cartilages and ligaments.	**CLO 5**	**12**
Total Hours		**60**

Learning resources

Textbooks:

1. Text book of Medical Physiology, Human Physiology An Integrated Approach by D.U. Silverthorn,Pearson.A.C. Guyton. W.B. Saunders CoFood Science and You Mehas, K.Y. and Rodgers, S.L. Food Science and You, McMillan McGraw Company, New York, 2000.
2. Textbook of Medical Physiology, Indu Khurana, Elsevier
3. Medical Physiology : Current Books International A.B. Mahapatra.

Reference Books:

1. Chaterjee, C.C., Human Physiology, Vol-I&II Medical allied agency, Calcutta 1981.
2. Best and Taylor, Living body. Mc.Graw hill company, Newyork.
3. Sathya Narayana, Essentials of Biochemistry (2000).

Course Curriculum

Name of the Program:	BSc Nutrition and Dietetics			Semester		1
Course Name	Community and Public Health Nutrition			Course Code		UBSND104/MAJM
Course Pattern	**2024**			**Version**		1.0
Teaching Scheme				**Assessment Scheme**		
Theory	**Practical**	**Tutorial**	**Total Credits**	**Hrs**	**CIA (Continuous Internal Assessment)**	**ESA (End Semester Assessment)**	**Practical/Oral**
3			3	3	40	60	-
Pre-Requisite:	**12th Science Pass**						
Course Objectives (CO):	The objectives of Community and Public Health Nutrition are: 1. To provide information regarding nutritional assessment. 2. To enable students to impart nutrition education among rural and needy people. 3. To acquaint them knowledge regarding food security and government and international program running in the field of community nutrition. 4. To learn different factors that affect food choices 5. To Demonstrate the importance of National Community Nutrition Programs						
Course Learning Outcomes (CLO):	Students would be able to: 1: Introduction to community Nutrition 2: Apply basic Dietery knowledge to conduct dietary survey 3: Demonstrate Food consumption pattern in different parts of India and Study food availability 4: Explain different factors that affect food choices 5: Demonstrate the importance of National Community Nutrition Programs						

Course Contents/Syllabus:
(All the units carry equal weightage in Summative Assessment and equal engagement)

Descriptors/Topics	**CLO**	**Hours**
UNIT I		
Introduction to community nutrition: Community Nutrition as a field, Public health nutrition, goals of nutrition program, dietary guidelines, Current trends and focus on community nutrition, Concept of Community, types of Community, Factors affecting health of the Community	**CLO 1**	**9**
UNIT II		
Direct and Nutritional Assessment: Diet survey: Need and importance, methods of dietary survey, Interpretation - concept of consumption unit, Diet survey methods, Nutritional anthropometry, Clinical signs and symptoms, Clinical Signs, Indirect nutritional status	**CLO 2**	**9**
UNIT III		

Food consumption pattern in different parts of India and food availability: Food balance sheets, Public distribution system, Food Corporation of India, Food production in India, major foods and their state wise production; Food security and poverty	**CLO 3**	**9**
UNIT IV		
Factor affecting food choices: Sociocultural factors in food choice and malnutrition, Values underlying food choices, Effect of food beliefs and ideologies education, food availability, food prices household food production, income, hygiene and diseases, Malabsorption on health and nutritional status of family.	**CLO 4**	**9**
UNIT V		
National &International Community Nutrition Programs: Introduction to national nutrition programs and policies, Programs for improving nutritional. status at national level,Integrated Child Development Services(ICDS),National Rural Development Program(NRDP),National Rural Employment Program (NREP),UNICEF,FAO	**CLO 5**	**9**
Total		**45 hours**

Textbooks:

1. Text book of Human NutritionBamji,M.S Rao, NP and ReddyV. 1996.Text book of Human Nutrition
2. Food Science and You Mehas, K.Y. and Rodgers, S.L. Food Science and You, McMillan McGraw Company, New York, 2000.
3. Textbook of Community Nutrition, ICAR New Delhl

Reference Books:

1. Jellife DN, Assessment of Nutritional Status of the community.
2. Ritchie JA, Teaching Nutrition FAO, 1979.
3. Rajalakshmi R, Applied Nutrition, Oxford and JBH Publishers, 1981.
4. Devadas RF, Nutrition in Tamil Nadu, Sanfam Publishers, Madras, 1972.

Online Resources:

https://onlinecourses.swayam2.ac.in/cec23_ag04/preview

Course Curriculum

Name of the Program:	BSc Nutrition and Dietetics	Semester	1
Course Name	Community and Public Health Nutrition: Lab	Course Code	UBSND105/MAJM
Course Pattern	2024	Version	1.0

Teaching Scheme					Assessment Scheme		
Theory	Practical	Tutorial	Total Credits	Hrs	CIA (Continuous Internal Assessment)	ESA (End Semester Assessment)	Practical/ Oral
	1		1	2	25		25

Pre-Requisite: 12th Science Pass

Course Objectives (CO):	The objectives of Community and Public Health Nutrition are: 1. To provide information regarding nutritional assessment. 2. To enable students to impart nutrition education among rural and needy people. 3. To Demonstrate Food consumption pattern in different parts of India and Study food availability. 4. To acquaint them knowledge regarding food security and government and international program running in the field of community nutrition. 5. To understand International community nutrition programs
Course Learning Outcomes (CLO):	Students would be able to: 1: Introduction to Community Nutrition 2: Apply basic Dietary knowledge to conduct dietary survey 3: Demonstrate Food consumption pattern in different parts of India and Study food availability 4: Explain different factors that affect food choices 5: Demonstrate the importance of National Community Nutrition Program

Course Contents/Syllabus:
(All the Practical's carry equal weightage in Summative Assessment and equal engagement)

Practical Plan

Practical Number	Practical Title	Week Number	Details	CLO	Hours
1	Visit to local health centers to identify clinical signs and symptoms of nutritional problems	Week 1	To Visit to local health centers	5	6
2.	Anthropometric Measurement of infant - Length, weight, circumference of chest, mid-upper arm circumference	Week 2	Study the Anthropometric Measurement of infant	2	2
3.	Identification of Nutritional Problem and Strategies to	Week 3	Conduct survey to Identify Nutritional Problem	3	2

	Tackle the Problem in Vulnerable Group				
4.	signs of nutrient deficiencies specially PEM (Kwashiorkor, marasmus) I vitamin A deficiencies	Week 4	Conduct analysis to study signs of nutrition deficiency	3	2
5.	Clinical assessment OF Anaemia, Rickets, B-Complex deficiencies	Week 5	Clinical assessment of deficiency diseases	3	2
6.	Preparation of A Low Cost Recipe	Week 6	To prepare meals for treating deficiency diseases	4	2
7.	Development of Nutrition Education Material Development of audio visual aids.	Week 7	Development of audio visual aids for material development	4	2
8.	To Plan a Nutrition and Health Education Program	Week 8	To Plan a Nutrition and Health Education Program	5	2
9.	Formulation of Nutrition Education Tool to Assess Knowledge, Attitude and Practices	Week 9	Designing nutritional tools	4	6
10	Conduct a Field Trip	Week 10	Study visit	5	4
			Total		30 hours

Learning resources

Textbooks:

1. Text book of Human NutritionBamji,M.S Rao, NP and ReddyV. 1996.Text book of Human Nutrition
2. Food Science and You Mehas, K.Y. and Rodgers, S.L. Food Science and You, McMillan McGraw Company, New York, 2000.
3. Textbook of Community Nutrition, ICAR New Delhi

Reference Books:

- Jellife DN, Assessment of Nutritional Status of the community.
- Ritchie JA, Teaching Nutrition FAO, 1979.3. Rajalakshmi R, Applied Nutrition, Oxford Publishers, 1981.
- Devadas RF, Nutrition in Tamil Nadu, Sanfam Publishers, Madras, 1972.
- Mc.Laren S, Nutrition and the community, John Wiley & Sons, 1982.
- Reddy AA, Extension Education, Srilakshmi Press, Baptla, 1971.

Course Curriculum

Name of the program	BSc ND		Semester : 1		Level: UG	
Course Name	Essentials of Food Science		Course Code/ Course Type		UBSND 106/ MAJM	
Course Pattern	2024		Version		1.0	
Teaching Scheme				Assessment Scheme		
Theory	Practical	Tutorial	Total Credits	Hours	CIA (Continuous Internal Assessment)	ESA (End Semester Assessment)	Practical/Oral
3			3	3	40	60	-
Pre-Requisite: 12th Science Pass							
Course Objectives (CO):	The objectives of **Essentials of Food Science**are: 1. To gain knowledge of food in relation to health 2. Obtain knowledge of different food groups, their composition and role in diet and interpret the nutritive value of food groups. 3. To Learned about different methods of processing and cooking in food industry 4. To gain knowledge of different plant and animal derived foods and their nutritive values and properties. 5. To learned about the role of food science in food product development.						
Course Learning Outcomes (CLO):	Students would be able to: 1. Students will be able to identify the chemical composition of food 2. Explain the different food groups, their composition and role in diet and interpret the nutritive value of food groups 3. Understand and apply different methods of processing and cooking in food industry. 4. Apply knowledge of different plant and animal derived foods and their nutritive values and properties. 5. Evaluate and Analyze data food science in food product development and in food Safety.						

Course Contents/Syllabus:
(All the Practical's carry equal weightage in Summative Assessment and equal engagement)

Descriptors/Topics	CLO	Hours
UNIT I		
Introduction of Food Science: Introduction to Nutrition definitions, functions of food, food groups, Food as a source of nutrients, Food Pyramid, My Healthy Plate, Food in relation to health, Palatability of food and measurement of acceptance by: testing, appearance, smell, test, over all acceptability	**CLO 1**	**9**
UNIT II		
Methods of cooking : Classification of cooking methods Role of water in cooking, different forms of cooking method using water. Moist heat Methods of Cooking: Boiling, Simmering, Poaching, Steaming, Stewing, Pressure cooking. **Dry heat Methods of Cooking: Air as medium of cooking:** Grilling,	**CLO 2**	**9**

Roasting, Baking. **Fat as medium of cooking:** Sautéing, Shallow fat frying, Deep fat frying. **Combination of cooking methods:** Braising. **Modern Methods of cooking:** Paper bag, Microwave Cooking, Infra-red Cooking.		
UNIT III		
Five Food Groups: Five Food Groups and Food guide, relationship between food and nutrition, functions of food, Composition, Nutritive value. **Cereals:** composition of rice, wheat, effects of cooking on parboiled and raw rice, principles of starch cookery, gelatinization. **Pulses and grams:** Varieties of pulses & grams, composition, nutritive value, processing, cooking quality of pulses, germination and its effect. **Vegetables :** Classification, composition, nutritive value, selection and preparation for cooking, methods and principles involved in cooking. Fruits - Composition, nutritive value, changes during ripening, methods and effects of cooking, enzymatic browning.	**CLO3**	**9**
UNIT IV		
Milk and Poultry: Five food Groups: Milk: Composition, nutritive value, kinds of milk, pasteurization and homogenization of milk, changes in milk during heat processing, Sources and its significance, role of milk and milk products in cookery. **Nuts and oil seeds:** composition, nutritive value, almond, coconut, cashewnut, gardencress seeds, soybean. **Egg:** Structure, grading, quality and Functional properties of eggs. **Meat** - Structure, Composition, types, Nutritive value, Classes and Grades of meat cuts, Changes on cooking and Rigor mortis, Tenderization and Ageing of meat.**Poultry** - Composition, Nutritive value, Grades, Methods of cooking, Effects of cooking on poultry. **Fish and Marine foods**: Classification and Composition, Selection and cooking, preservation andprocessing	**CLO4**	**9**
UNIT V		
Fats and Oils: Types of oils, function of fats and oils, shortening effects of oil, smoking point of oil, factors affecting absorption of oil. **Sugar cookery:** Stages of sugar cookery, crystallization and factors affecting crystallization. Beverages: Classification and importance of beverages, food pigments, different types of beverages, carbonated alcoholic and non alcoholic beverages, browning reactions, **Sensory Evaluation:** Requirements to conduct sensory evaluation- Sensory panel, Preparing and Presenting Samples for Testing, Panel booth. Sensory Tests – types, Analytical and Affective Tests	**CLO5**	**9**
Total		**45 hours**

Learning resources:

Textbooks:

1. Srilakshmi, B. (2015). **Food Science.** 3rd Edition. New Delhi: New AgeInternational.
2. Shakunthala Manay and Shadakhraswamy M., 2008. **Food Facts and Principles**, Third Edition, New Age International Publishers, New Delhi

Reference Book :

1. Mudambi .R. Sumathi and Rajagopal M.V (2008), **Food Science.** NewAge International Publishers, New Delhi.
2. Thangam E. Philip (1998). **Modern Cookery Volume II, Orient Longman, II Edition**., Hyderabad

Online Resources/E-Learning Resources

1. https://ugcmoocs.inflibnet.ac.in/assets/uploads/1/129/4459/et/W7-L3%20-%20Script%20-Structure,%20composition%20and%20nutritive%20value%20of%20Egg%20and%20Poultry200302070703032828.pdf
2. https://www.researchgate.net/publication/227046039_Eggs/link/02bfe50ebfe4a54311000000/download?_tp=eyJjb250ZXh0Ijp7ImZpcnN0UGFnZSI6InB1YmxpY2F0aW9uIiwicGFnZSI6InB1YmxpY2F0aW9uIn
3. https://www.slideshare.net/sydai/meat-63661156

Course Curriculum

Name of the Program:	**BSc ND**		**Semester : 1**		**Level: UG**	
Course Name	**Essentials of Food Science LAB**		**Course Code/ Course Type**		UBSCND 107/MAJM	
Course Pattern	**2024**		**Version**		1.0	
Teaching Scheme			**Assessment Scheme**			
Theory	**Practical**	**Tutorial**	**Total Credits**	**Hours**	**CIA(Continuous Internal Assessment)**	**ESA (End Semester Assessment)**	**Practical/Oral**
	1		1	2	25		25
Pre-Requisite:							
Course Objectives (CO):			The objectives of (**Essentials of Food Science**) are: 1. To gain knowledge of food in relation to health 2. Obtain knowledge of different food groups, their composition and role in diet and interpret the nutritive value of food groups. 3. To Learned about different methods of processing and cooking in food industry 4. To gain knowledge of different plant and animal derived foods and their nutritive values and properties. 5. To learned about the role of food science in food product development.			
Course Learning Outcomes (CLO):			Students would be able to: 1. Students will be able to identify the chemical composition of food 2. Explain the different food groups, their composition and role in diet and interpret the nutritive value of food groups 3. Understand and apply different methods of processing and cooking in food industry. 4. Apply knowledge of different plant and animal derived foods and their nutritive values and properties. 5. Evaluate and Analyze data food science in food product development and in food Safety.			

Course Contents/Syllabus:
(All the Practical's carry equal weightage in Summative Assessment and equal engagement)

Practical Plan

Practical Number	**Practical Title**	**Week Number**	**Details**	**CLO**	**Hours**
1	Practical 1: Identification of foods and food groups	Week 1	Identification of foods and food groups , types of vegetables , nutritive value of fruits and vegetables	CLO1	4
2.	Practical 2: Weighing and measuring of food	Week 2	Weighing and measuring of food items- flours, cereals and	CLO1	4

	items		cereal products, pulses and dals, sugar, oils and other liquid foods.		
3.	Practical 3: Edible portion Separation	Week 3	Edible portion: Determination of edible portion percentage of different foods.	CLO 1	2
4.	Practical 4: Preparation of recipes by using different food groups	Week 4	Preparation of recipes using cereals and pulses, Preparation of recipes using fruits.	CLO 2	4
5.	Practical 5: Starch cookery	Week 5	Methods of cooking fine and coarse cereals. Examination of starch	CLO 2	2
6.	Practical 6: Vegetable Cookery	Week 6	Experimental cookery using vegetables of different colours & textures. Common Preparations with vegetables	CLO3	2
7.	Practical 7: Demonstration of different cooking techniques	Week 7	Demonstration of different cooking techniques with nutrient loss, grilling, poaching, steaming, tandoor	CLO 4	6
8.	Practical 8: Experiment on Quality Evaluation of Eggs	Week 8	Experiment on Quality Evaluation of Eggs	CLO 4	2
9.	Practical 9: Effect of various additives on the stability of egg white foam	Week 9	To study the effect of various additives on the stability of egg white foam	CLO 4	2
10	Practical 10: Preparation of milk based products (paneer)	Week 10	Preparation of milk based products (paneer)	CLO 5	2
11	Practical 11: Sensory evaluation of food	Week 11	Sensory evaluation of food	CLO5	2
			Total		30 Hours

Learning resources:

Textbooks:

1. Srilakshmi, B. (2015). **Food Science.** 3rd Edition. New Delhi: New AgeInternational. Shakunthala Manay and Shadakhraswamy M., 2008.
2. Food Facts and Principles, Third Edition, New Age International Publishers, New Delhi

Reference Book :

1. Mudambi .R. Sumathi and Rajagopal M.V (2008), **Food Science.** NewAge International Publishers, New Delhi.

2. Thangam E. Philip (1998). **Modern Cookery Volume II, Orient Longman, II Edition**., Hyderabad

Online Resources/E-Learning Resources

1. https://www.slideshare.net/sydai/meat-63661156
   https://egyankosh.ac.in/bitstream/123456789/10622/1/Unit-3.pdf
2. https://egyankosh.ac.in/bitstream/123456789/33580/1/Unit-1.pdf
   https://www.slideshare.net/ektadugar/group-3-sugars

Course Curriculum

Name of the Program:	BSc Nutrition and Dietetics				Semester:1		LEVEL: UG
Course Name	Understanding Fitness				Course Code		UBSND 108/OE
Course Pattern	2024				Version		1.0
Teaching Scheme					Assessment Scheme		
Theory	Practical	Tutorial	Total Credits	Hrs	CIA (Continuous Internal Assessment)	ESA (End Semester Assessment)	Practical/Oral
2			2	2	50	-	-
Pre-Requisite: Human Anatomy							
Course Objectives (CO):	The objectives of **Understanding Fitness** are: 1. Students will be able to perform various exercises like gym workouts, aerobic, anaerobic exercises and flexibility to enhance their physical fitness status. 2. Students will be able to learn the different techniques of measuring body composition 3. by anthropometry like BMI, Skinfold measurements and WHR and interpret the results in terms of its health implications. 4. Students will understand the benefits of exercise & increased physical activity on health through skilled based experiential learning through workshops on Aerobics, Zumba and Yoga. 5. Students will understand the basics of nutrition and balanced diet for health and fitness.						
Course Learning Outcomes (CLO):	Students would be able to: 6. To identify and importance of Understanding Fitness. 7. To recognize all the parts of musculoskeletal system involved in exercise physiology. 8. To develop skills in setting realistic and achievable fitness goals, creating action plans, and maintaining motivation and adherence to exercise routines. 9. To learn how to design safe and effective exercise programs tailored to different fitness levels, goals, and populations, considering principles such as frequency, intensity, duration, and type of activity. 10. Analyze and comprehend the role of various nutrients in performance and recovery.						

Course Contents/Syllabus:
(All the units carry equal weightage in Summative Assessment and equal engagement)

Descriptors/Topics	CLO	Hours
UNIT I		
Introduction To Health and Physical Fitness - Definitions of health and Physical fitness. - Benefits of increased physical activity – improved health, improved sense of wellbeing, improved appearance, enhanced social life, increased stamina	**CLO 1**	**6**
UNIT II		
Human Muscle Anatomy -Basic structure of a muscle with the help of a diagram. - Functions and locations of muscles in the body - muscle groups (only names) –Major skeletal muscles	**CLO 2**	**6**
UNIT III		
Basics of Exercise Regime - FITT formula – Frequency, Intensity, Time & Type of exercises for fitness. - Warm up exercises - Cool down exercises	**CLO 3**	**6**
UNIT IV		
Types of Exercises - Benefits of regular and adequate exercise - Types of exercises and health benefits with suitable examples. Aerobic exercises Anaerobic exercises Flexibility exercises	**CLO 4**	**6**
UNIT V	**CLO 5**	**6**
Fitness and Nutrition: Introduction to nutrients, Role of Supplements, Hydration Therapy		
Total Hours		**30 hours**

Learning resources

- Tanushree Podder :Fit & Fine In Body And Mind , Pustak Mahal, Dehli, India, 2001
- Brian J. Sharkey, PhD, Steven E. Gaskill, PhD, University of Montana : Fitness And Health,7th Edition, Human Kinetics,USA, 2013Page 5 of 6
- Alton L. Thgerson & Steven M.Thygerson : Fit To Be Well – Essential Concepts, SecondEdition, Jones And Barlett Publishers, Canada, 2009
- Melvin H. Williams, Old Dominion University : Nutrition For Health, Fitness & Sport, SixthEdition, Mcgraw-Hill, Boston,2002
- Padmakshan Padmanabhan: Handbook of Health and Fitness, Indus source books, Mumbai,India, 2014

Online Resources

1. Physical activity and Health:
    a. https://www.cdc.gov/nccdphp/sgr/pdf/execsumm.pdf
2. Effect of Exercise on Individual's Health
   https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1470658/
3. Exercises and Metabolic Syndrome:
    a. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3737927/

Course Curriculum

Name of the Program:		**BSc Clinical Psychology**		**Semester : 1**		**Level: UG**	
Course Name		**Food Psychology**		**Course Code/ Course Type**		UBSCP 107 /OE	
Course Pattern		**2024**		**Version**		1.0	
Teaching Scheme					**Assessment Scheme**		
Theory	**Practical**	**Tutorial**	**Total Credits**	**Hours**	**CIA (Continuous Internal Assessment)**	**ESA (End Semester Assessment)**	**Practical/ Oral**
2			2	2	50	-	-
Pre-Requisite: XII Science / XII Arts with Psychology as Major/Minor							
Course Objectives (CO):		The objectives of Food Psychology course are: 1. To understand the psychology of eating behavior. 2.Analyzing perception towards taste and food preferences. 3.Understanding various eating disorders and food behavioral issues. 4.Exploring role of Psychology in mindful eating behavior 5. Analyzing food marketing and consumer behavior.					
Course Learning Outcomes (CLO):		Students would be able to understand and apply: 1. The knowledge of food preferences with psychology 2. Interconnection between psychology and eating behavior. 3. Various hormones that influence eating behavior. 4. Assess cognitive and behavioral aspects of food choice. 5. Analyze current food marketing trends and consumer behavior					

Course Contents/Syllabus:

(All the units carry equal weightage in Summative Assessment and equal engagement)

Descriptors/Topics	**CLO**	**Hours**
UNIT I		
Introduction to Food Psychology: Meaning and Definition of Food Psychology,Relationship between food and Human behavior,Understanding emotions and thoughts.	**CLO1**	**6**
UNIT II		
Food Preferences and Taste Perception: Understanding Sensory attributes, Role of Culture and Past experiences in food preferences, Understanding the types of taste buds And their working	**CLO2**	**6**

UNIT III		
Body Image and Eating disorders: Types of body Type,Understanding Body Imaging and relation between food consumption,Introduction on Various types of eating disorders	**CLO3**	**6**
UNIT IV		
Food Marketing and Consumer Behavior: Understanding the consumer behavior and due to various marketing strategies,Nutrition labelling	**CLO4**	**6**
UNIT V		
Intervention Strategies:Developing successful intervention to improve Emotional eating and Mental Health.	**CLO5**	**6**
Total Hours		**30**

Learning resources

Textbooks:

1.Lyman, B. (2012). *A Psychology of Food: More Than a Matter of Taste*. Springer Netherlands

Reference Books:

1.Shepherd, R., & Raats, M. (2006). *The Psychology of Food Choice*. CABI.

2.Cargill, K. (2015). *The Psychology of Overeating: Food and the Culture of Consumerism* Bloomsbury Academic.

Online Resources/E-Learning Resources

1.https://youtu.be/8lkhpkcfMjI?si=M8seWw2FcP25PtJe

2.https://youtu.be/Wth5CSX7_hQ?si=JglQx_fEhTiGyKSv

Course Curriculum

Name of the Program:	BSc Nutrition and Dietetics	Semester: 1	Level: UG
Course Name	Basics of Computer Applications	Course Code/ Course Type	UBSND 109 / SEC
Course Pattern	2024	Version	1.0

Teaching Scheme **Assessment Scheme**

Theory	Practical	Tutorial	Total Credits	Hours	CIA (Continuous Internal Assessment)	ESA (End Semester Assessment)	Practical/ Oral
	1	-	1	2	25	-	25

Pre-Requisite: None

Course Objectives (CO):	The objectives of Basics of Computer Applications are: 1. To recall the major components of a computer system, including CPU, memory, storage devices, and input/output devices. 2. To recognize the various functions of the Computer 3. To understand the functions of Microsoft excel 4. To create effective Microsoft Powerpoint presentations 5. To apply knowledge of Microsoft Word.
Course Learning Outcomes (CLO):	Students would be able to: 1. Identify the major components of a computer system, including CPU, memory, storage devices, and input/output devices. 2. Explain the various functions of the computer system, including processing data, storing information, and facilitating communication. 3. Create Microsoft PowerPoint and learn the art of effective presentations 4. Apply Microsoft Excel to create and manipulate spreadsheets. 5. Apply knowledge of Microsoft Word for document creation and formatting.

Contents/Syllabus:

(All the Practical's carry equal weightage in Summative Assessment and equal engagement)

Practical Plan

Practical Number	Practical Title	Week Number	Details	CLO	Hours
1	Identify the peripherals of a computer, components in a CPU and its functions.	Week 1	Draw the block diagram of the CPU along with the configuration of each peripheral	CLO1/ CLO2	6
2.	Create project certificate using Microsoft Word	Week 2	Features to be covered:- Formatting Fonts, Drop Cap, Applying Text effects, Using Character Spacing, Borders and Colors, Inserting Header and Footer, Using Date	CLO3	6
3.	Creating project abstract	Week 3	Features to be covered:-Formatting Styles, Inserting table, Bullets and Numbering, Changing Text Direction, Cell alignment, Footnote, Hyperlink, Symbols, Spell Check, Track Changes	CLO3	6
4.	Using Excel to create a scheduler	Week 4	Accessing, overview of toolbars, saving spread sheet files, Using help and resources.Gridlines, Format Cells, Summation, auto fill, Formatting Text	CLO4	6
5.	Creating Power Point	Week 5	Student should work on basic power point utilities PPT Orientation, Slide Layouts, Inserting Text, Formatting Text, Bullets and Numbering, AutoShapes, Lines and Arrows ,Hyperlinks, Inserting Images, Tables and charts .	CLO5	6
			Total Hours		**30 Hours**

Learning resources

Textbooks:

1.Wallace Wang. 2016. Absolute Beginners Guide to Computing (1st. ed.). Apress, USA

Reference Books:

1.Bernstein, J. (2018). *Computers Made Easy: From Dummy to Geek* (Book 1 of Computers Made Easy Series). Independently Published.

Online Resources/E-Learning Resources

1. https://youtu.be/iggvA8-Or1w?si=RnxZMuNJWzADSm57
2. https://youtu.be/HB4I2CgkcCo?si=H7tVvO0puWaV7hOa
3. https://youtu.be/16fZZXexZuE?si=QauuL9g1VYnbbFTb

Course Curriculum

Name of the Program:	B.Sc	Semester : 1	Level: UG
Course Name	UHV-I: Professional Ethics	Course Code/ Course Type	ACUHV101/AC
Course Pattern	2024	Version	1.0

Teaching Scheme					Assessment Scheme		
Theory	Practical	Tutorial	Total Credits	Hours	CIA (Continuous Internal Assessment)	ESA (End Semester Assessment)	Practical/ Oral
2				2	50	-	-

Pre-Requisite: 12th Science Pass

Course Objectives (CO):	The objectives of Universal Human Value- Professional Ethics are: 1. To make the students understand the importance of ethical behavior 2. To expose the students to the ethical practices to be followed in profession 3. To sensitize the students to become responsible persons who will uphold ethics in profession when they pursue their career 4. To make students understand Psychological and Philosophical approaches 5. To make students understand social responsibility and corporate Sustainability
Course Learning Outcomes (CLO):	Students would be able to: 1. Equip themselves with an understanding of moral, professional and personal values. 2. Understand the need of ethics in shaping their profession The learners will hone their decision-making skills. 3. Refine their business ethics based on psychological and philosophical perspective. 4. Assess the need for a balance between ecology, and economy. 5. Equip themselves with a better understanding of themselves and the society they live in and the responsibilities they shoulder in creating a sustainable world.

Course Contents/Syllabus:
(All the units carry equal weightage in Summative Assessment and equal engagement)

Descriptors/Topics	CLO	Hours
UNIT I		
Individual and Professional Ethics: Introduction to Professional Ethics, Morals, Values and Ethics – Personal and Professional- Sensé of Professional Ethics – Code of Ethics by NSPE-Making decisions with ethical dimensions–definition–roadmap to ethical decision making–	**CLO 1**	**6**

common standards– internal obstacles – bias – empathy		
UNIT II		
Business Ethics: Philosophical approaches to Business Ethics – ethical reasoning – ethical issues in business - Social Responsibility of Business-conflict of interest–cultural relativism-Ethical Leadership-Resisting un-ethical authority and domination-Global Business Ethics.	**CLO 2**	**6**
UNIT III		
Psychological Approaches: Ethical Theories-Psychological and Philosophical Approaches-Myths about Morality-conflict of interest in psychological perspective - Courage-Integrity – ethical dilemma – Emotional Intelligence (Mahabharata- Iskcon Publications)	**CLO 3**	**6**
UNIT IV		
Workplace Ethics: Ethics in changing domains of Research–academic integrity–intellectual honesty-Role of Engineers and Managers-Ethical issues in Diverse workplace – competition – free will- Confidentiality – employee rights – Intellectual property rights – discrimination	**CLO 4**	**6**
UNIT V		
Safety, Responsibilities and Rights: Ecology, and Economy-Risk benefit analysis and reducing risk SDGs–Corporate social responsibility and Corporate Sustainability - CSR in India - Sustainability Case Studies	**CLO 5**	**6**
Total Hours		**30**

Learning resources

Textbooks:

1. Subramanian. R. *Professional Ethics*, Oxford Publication,2013.
2. Nagarasan. R. S. *Professional Ethics and Human Values*. New Age International Publications, 2006.

Reference Book:

1. Mike W Martin and Roland Schinzinger, *Ethics in Engineering*,4th edition, Tata McGraw Hill Publishing Company Pvt Ltd, New Delhi,2014

Online Resources/E-Learning Resources

1. https://www.nspe.org/resources/ethics/code-ethics
2. https://www.toolshero.com/tag/ethical-decision-making/
3. https://pagecentertraining.psu.edu/public-relations-ethics/introduction-to-public-relations-ethics/lesson-1/ethical-theories/
4. https://peer.asee.org/case-studies-in-engineering-ethics.pdf

CIA Guidelines

Online Quiz (Based on MCQ)- 20 marks

Activity (with short Report Submission) - 20 Marks

Academic Sincerity - 10 marks

Few of the suggested activities are Assignments, Debates, Poster presentations, Model making, Group presentation, Field visits and Group Discussions.

Few of suggested topics related to **UHV1- Professional Ethics** are:

Debate Topics

- Ethical Approach versus Realistic Approach
- Individual and Social Approach
- Dilemma between heart and Mind

Activity

- ❖ Analyze the wastage (Electricity or any other) at work place? How you managed.

Assignment

- ➢ Analyze the code of ethics at work place
- ➢ If you fulfil the duties, rights will automatically fall in place. Justify the statement

References:

https://www.aicte-india.org/sites/default/files/Model_Curriculum/Minor%20Degree%20in%20Universal%20Human%20Values%20(UHV).pdf

https://uhv.org.in/

https://vvce.ac.in/wp-content/uploads/2021/04/Realising-Aspirations-of-NEP2020-UHV.pdf

Course Curriculum

Name of the Program:	**BA English**	**Semester : 1**	**Level: UG**
Course Name	**MODERN GRAMMAR AND USAGE**	**Course Code/ Course Type**	USLAE107/AEC
Course Pattern	**2024**	**Version**	1.0
Pre-Requisite: 12th Pass			

Teaching Scheme					**Assessment Scheme**		
Theory	**Practical**	**Tutorial**	**Total Credits**	**Hours**	**CIA (Continuous Internal Assessment)**	**ESA (End Semester Assessment)**	**Practical/ Oral**
2	-	-	-	30	50	-	-

Pre-Requisite:	
Course Objectives (CO):	The objectives of (MODERN GRAMMAR AND USAGE) are: 1. to impart basic knowledge of modern grammar. 2. to comprehend Syntax of the English Language 3. to familiarize with issues in Modern English Grammar 4. to comprehend common errors in English 5. to focus on motivating students to express themselves in correct English.
Course Learning Outcomes (CLO):	By the end of the course, students will be able to— 1.Measure a strong theoretical understanding on Modern grammar 2. Distinguish between acceptable and inappropriate grammar and usages, 3. Produce free use of expressions in writing, 4. Practice advanced forms of writing, and 5. Produce clarity and conciseness on writing

Descriptors/Topics	CLO	Hours
UNIT 1		
Basics: Parts of Speech-Nouns, Articles, Pronouns, Adjectives, Adverbs, prepositions, Conjunctions, interjections. Forms of Be, Tenses, Reported speech, and their usage	**CLO1**	**06**
UNIT 2		
Syntax: Sentence, phrase, clause structures, coordination and subordination	**CLO2**	**06**
UNIT 3		
Usage Issues in Modern English Grammar: Punctuation, verb forms, Subject-verb agreement, Pronoun-Antecedent agreement, Auxiliaries, Adjective-Adverb Confusions	**CLO3**	**06**
UNIT 4		
Common Errors in English: Dangling construction, Parallel construction, American vs. British, Errors in common expressions, Errors by Non-Native students	**CLO4**	**06**
UNIT 5		
Style and composition: Emphasis, Clarity, Concision and Consistency, Forms of writing	**CLO5**	**06**
Total Hours		**30**

Learning resources

Textbooks:

1. Green, David.. 2014. Contemporary English Grammar—Structures and Composition. Hyderabad: Macmillan

2. Narayanaswamy, K. R. 2003. Success with Grammar and Composition. Hyderabad: Orient Longman

Reference Books:

1. Bas Aarts. 2011.Oxford Modern English Grammar. Oxford University Press, Oxford.

Online Resources/E-Learning Resources

1. https://en.wikipedia.org/wiki/Modern_English
2. https://www.britannica.com/topic/English-language/Characteristics-of-Modern-English

SEMESTER - II

PROGRAM STRUCTURE

Course Curriculum

Name of the Program:	**BSc ND**			**Semester : 2**		**Level: UG**	
Course Name		**Nutrition and Metabolism**		**Course Code/ Course Type**		UBSND 110/MAJM	
Course Pattern		**2024**		**Version**		1.0	
Teaching Scheme					**Assessment Scheme**		
Theory	**Practical**	**Tutorial**	**Total Credits**	**Hous**	**CIA (Continuous Internal Assessment)**	**ESA (End Semester Assessment)**	**Practical/Oral**
3			3	3	40	60	-
Pre-Requisite: Basics of Human Nutrition							
Course Objectives (CO):	The objectives of Nutrition and Metabolism are: 1. To gain knowledge of the processes involved in anabolic and catabolic reactions 2. To Obtain knowledge of different steps necessary for carbohydrate, lipid, and protein metabolisms 3. To gain knowledge of different importance of vitamins and minerals in the diet 4. To analyze an insight into interrelationships between various metabolic pathways 5. To evaluate the relation of nutrients in diseases.						
Course Learning Outcomes (CLO):	Students would be able to: 1. Identify the processes involved in anabolic and catabolic reactions 2. Explain the different steps necessary for carbohydrate, lipid, and protein metabolisms 3. Apply knowledge of different importance of vitamins and minerals in the diet 4. Analyze insight into interrelationships between various metabolic pathways 5. Apply Identify and describe common metabolic disorders.						

Contents/Syllabus:

(All the units carry equal weightage in Summative Assessment and equal engagement)

Descriptors/Topics	**CLO**	**Hours**
UNIT I		
Carbohydrates and proteins: Functions, sources, requirements, digestion and absorption of carbohydrates; Metabolism of carbohydrates, and maiantananace of blood glucose levels, role of dietary fibre in various physiological disorders, Disorders of carbohydrate metabolism. Basis of requirement, functions, sources, digestion and absorption of protein; Methods of assessing protein quality. Inborn errors of amino acid metabolism.	**CLO 1**	**9**
UNIT II		
Lipids: Basis of requirement, functions, sources, digestion, absorption and	**CLO 2**	**9**

metabolism of fats, deficiency disorders of lipids; essential fatty acids and eicosanoids. Inborn errors of lipid metabolism		
UNIT III		
Fat Soluble Vitamins: classification, overview, absorption, storage and elimination of fat soluble vitamins A,D,E K, RDA, Deficiency, toxicity.	**CLO 3**	**9**
UNIT IV		
Water Soluble Vitamins: classification, overview, absorption, storage and elimination of water soluble vitamins, RDA, Deficiency, toxicity	**CLO 4**	**9**
UNIT V		
Minerals: Nutritional functions absorption and metabolism. Interaction of micro minerals with other nutrients. Factors affecting on absorption of minerals.	**CLO 5**	**9**
Total Hours		**45**

Learning resources

Text Reading:

1. Srilakshmi, B. (2015). **Food Science.** 3rd Edition. New Delhi: New Age International. Shakunthala Manay and Shadakhraswamy M., 2008.

2. Food Facts and Principles, Third Edition, New Age International Publishers, New DelhiNorman N Potter. (2007). Food Science, Fifth edition, An Aspen Publication, Mariland.

3. Vijayakhader. (2001). Text book of Food science and Technology, ICAR, New D 6. G. Subbulakshmi&Shobha A. Udipi. (2001).

4. Food processing and preservation. New Age International (P) Ltd., Publishers Bangalore, Chennai. Hyderabad.

Reference Books:

1. Allied Chemistry author by Dr. V. Veeraiyan
2. Biochemistry - author – U. sAtyanarayan, U. chakrapani
3. Unified Chemistry by O.P. Agrawal
B.Sc. Chemistry Inorganic, Organic & Physical Chemistry by T.Krishna Murthy SambasiOnline

Online Resources/E-Learning Resources

1.https://www.igmpi.ac.in/post-graduate-diploma-in-food-science-and-technology.html?gad_source=1&gclid=CjwKCAjwoPOwBhAeEiwAJuXRh3f48y0qHMacrNyAj40wGEppIgvreoOcyIjpJasrhqWxTu0CcrKsRBoCcYUQAvD_BwE

Course Curriculum

Course Name		Nutrition and Metabolism – Lab		Course Code/ Course Type		UBSCND 111/MAJM	
Name of Program		BSc ND		Semester : 2		Level: UG	
Course Pattern		2024		Version		1.0	
Teaching Scheme						Assessment Scheme	
Theory	Practical	Tutorial	Total Credits	Hours	CIA(Continuous Internal Assessment)	ESA (End Semester Assessment)	Practical/Oral
	1		1	2	25	-	25
Pre-Requisite: Basics of Human Nutrition							
Course Objectives (CO):		The Objectives of Nutrition and Metabolism are : 1. To gain knowledge of the processes involved in anabolic and catabolic reactions 2. To obtain knowledge of different steps necessary for carbohydrate, lipid, and protein metabolisms 3. To describe the role of each macronutrient and micronutrient in the body 4. To gain knowledge of different importance of vitamins and minerals in the diet 5. To develop an insight into interrelationships between various metabolic pathways.					
Course Learning Outcomes (CLO):		Students would be able to: **1:** To understand and Identify essential nutrients and describe their functions in the body. **2**: Learned to Describe the role of each macronutrient and micronutrient in the body. **3**: To apply the process of energy metabolism, including digestion, absorption, and utilization of nutrients for energy production. **4:**To apply Identify and describe common metabolic disorders. **5:** To develop an insight into interrelationships between various metabolic pathways.					

Course Contents/Syllabus:
(All the Practical's carry equal weightage in Summative Assessment and equal engagement)

Practical Plan

Practical Number	Practical Title	Week Number	Details	CLO	Hours
1	Practical 1:	Week 1	Calculation of per cent energy supplied by Carbohydrates in diet	CLO1	2
2	Practical 2	Week 2	physical activity and energy balance	CLO1	2
3	Practical 3	Week 3	Physical activity and energy balance	CLO2	2

			of non working day		
4.	Practical4:-	Week 4	Calculation of fiber and carbohydrates by dietary record methods	CLO 2	2
5	Practical 5:	Week 5	survey on high fiber products.	CLO3	2
6	Practical 6:	Week 6	case study on lactose intolerance	CLO 3	2
7	Practical 7:	Week 7	preparation of teaching aid on fiber rich products and source of fiber	CLO 3	2
8	Practical 8:	Week 8	Biological methods of evaluation of protein quality-PER and NPR	CLO 4	2
9	Practical 9	Week 9	Biological methods of evaluation of protein quality-NPU	CLO 4	2
10	Practical10:	Week 10	Chemical methods of evaluating protein quality	CLO4	2
11	Practical 11	Week 11& 12	Calculation of Protein quality of food groups	CLO3/4	4
12	Practical 12	Week 13,14,15	Calculation of Protein quality of protein rich dishes planning and evaluation	CL3/4	6
			Total		**30 hours**

Learning resources-

Text Reading:

1. Srilakshmi, B. (2015). **Food Science.** 3rd Edition. New Delhi: New Age International. Shakunthala Manay and Shadakhraswamy M., 2008.
2. **Food Facts and Principles**, Third Edition, New Age International Publishers, New Delhi
3. Norman N Potter. (2007). Food Science, Fifth edition, An Aspen Publication, Mariland.
4. Vijayakhader. (2001). Text book of Food science and Technology, ICAR, New D 6. G. Subbulakshmi&Shobha A. Udipi. (2001). Food processing and preservation. New Age International (P) Ltd., Publishers Bangalore, Chennai. Hyderabad.

References:

1. Mudambi .R. Sumathi and Rajagopal M.V (2008), **Food Science.** New Age International Publishers, New Delhi.

Online Resources/E-Learning Resources

1. https://youtu.be/mvCND6nUyIs (2024)

Course Curriculum

Name of the Program:	BSc Nutrition and Dietetics				Semester		2
Course Name	Basics of Human Physiology				Course Code		UBSND 112/MAJM
Course Pattern	2024				Version		1.0
Teaching Scheme					Assessment Scheme		
Theory	Practical	Tutorial	Total Credits	Hrs	CIA (Continuous Internal Assessment)	ESA (End Semester Assessment)	Practical/ Oral
4			4	4	40	60	-
Pre-Requisite: Human Anatomy							

Course Objectives (CO):	The objectives of Basics of Human Physiology are: 1. Explain the gross morphology, structure and functions of various organs of the human body. 2. Describe the various homeostatic mechanisms and their imbalances. 3. Identify the various tissues and organs of different systems of human body. 4. Perform the hematological tests like blood cell counts, hemoglobin estimation, bleeding/clotting time etc and also record blood pressure, heart rate, pulse and respiratory volume. 5. Appreciate coordinated working pattern of different organs of each system
Course Learning Outcomes (CLO):	Students would be able to: 1:To understand fundamental knowledge on the structure and functions of the various systems of the human body. 2: To understand both homeostatic mechanisms 3: Identify the various tissues and organs of different systems of human body. 4: To Identify and describe disorders or diseases in human body 5: Identify and recognize various joints in Musculo skeletal system

Course Contents/Syllabus:
(All the Practical's carry equal weightage in Summative Assessment and equal engagement)

Descriptors/Topics	CLO	Hours
UNIT I		
Endocrinesystem: Classification of hormones, mechanism of hormone action, structure and functions of pituitary gland, thyroid gland, parathyroid gland, adrenal gland, pancreas, pineal gland, thymus and their disorders.	**CLO 1**	**12**
UNIT II		
Digestivesystem: Anatomyof GITract with special reference to anatomyand functions of stomach, (Acid production in the stomach, regulation of acid production through parasympatheticnervoussystem,pepsinroleinproteindigestion)smallintestine and large intestine, anatomyand functions of salivary glands, pancreas andliver,movementsof GIT,digestionandabsorptionofnutrientsand disorders of GIT. **Energetics:** FormationandroleofATP,CreatininePhosphateandBMR.	**CLO 2**	**12**

UNIT III		
Respiratorysystem, Urinarysystem: **Respiratorysystem**: Anatomyof respiratorysystem with special reference to anatomyof lungs, mechanism of respiration, regulation of respiration, Lung Volumes and capacities transport of respiratory gases, artificial respiration, and resuscitation methods. **Urinary system:** Anatomy of urinary tract with special reference to anatomy of kidney and nephrons, functions of kidney and urinary tract, physiology of urine formation, micturition reflex and role of kidneys in acid base balance, role of RAS in kidney and disorders of kidney.	**CLO 3**	**12**
UNIT IV		
Reproductivesystem: Anatomy of male and female reproductive system, Functions of male and female reproductive system, sex hormones, physiology of menstruation, fertilization, spermatogenesis, oogenesis, pregnancy and parturition**Introduction to genetics:** Chromosomes, genes and DNA, protein synthesis, genetic pattern of inheritance.	**CLO 4**	**12**
UNIT V		
Skeletal Systems: Anatomy, functions of skeletal system, bone classification, bone structure, Bone formation and development, joints and its types, cartilages and ligaments.	**CLO 5**	**12**
Total Hours		**60**

Learning resources

Textbooks:

1. Text book of Medical Physiology, Human Physiology An Integrated Approach by D.U. Silverthorn,Pearson.A.C. Guyton. W.B. Saunders CoFood Science and You Mehas, K.Y. and Rodgers, S.L. Food Science and You, McMillan McGraw Company, New York, 2000.
2. Textbook of Medical Physiology, Indu Khurana, Elsevier
3. Medical Physiology : Current Books International A.B. Mahapatra

Reference Books:

1. Chaterjee, C.C., Human Physiology, Vol-I&II Medical allied agency, Calcutta 1981.
2. Best and Taylor, Living body. Mc.Graw hill company, Newyork.
3. Sathya Narayana, Essentials of Biochemistry (2000).

Online resources:https://www.coursera.org/learn/physiology\

Course Curriculum

Name of the Program:		BSc ND		Semester: 2		Level: UG	
Course Name		Introduction to Nutritional Biochemistry		Course Code/ Course Type		UBSND 113/MAJM	
Course Pattern		2024		Version		1.0	
Teaching Scheme					Assessment Scheme		
Theory	Practical	Tutorial	Total Credits	Hours	CIA (Continuous Internal Assessment)	ESA (End Semester Assessment)	Practical/Oral
3			3	3	40	60	
Pre-Requisite: 12th Science Pass							
Course Objectives (CO):		The objectives of **Introduction to Nutritional Biochemistry** are: 1. To enable the student to understand the chemical characteristics of different classes of nutrients. **2.** To explain the process of digestion, absorption and metabolism of macronutrients and micronutrients. **3.** To understand the metabolic pathways involved in energy production, including glycolysis, the citric acid cycle, and oxidative phosphorylation. 4. To understand the chemistry of foods - composition of food, role of each component and their interaction. 5. To understand the functional aspects of food components and to study their role in food processing					
Course Learning Outcomes (CLO)		Students would be able to: 1: The student will have knowledge of biochemical pathways of different nutrients, how they function biochemically and physiologically. **2:** The student will get information about the role of diet and the nutrients present in them 3:To foster the ability to critically evaluate scientific literature in nutritional biochemistry. 4: To encourage independent research and the application of biochemical principles to real-world nutritional issues. 5: To explain the students the functional aspects of food components					

Course Contents/Syllabus:
(All the units carry equal weightage in Summative Assessment and equal engagement)

Descriptors/Topics	CLO	Hours
UNIT I		
Introduction to Nutritional Biochemistry Meaning and Importance of Nutritional Biochemistry Development of Nutritional Biochemistry ,Acid Base Balance - Normal	**CLO 1**	**9**

Health, Major Sources of Acid Produced in the Body, Buffers, Physiological Role of Different Buffer Systems. Chemistry of Carbohydrates , Monosaccharides, Isomerism of Monosaccharides, Properties of Monosaccharides, Oligosaccharides, Polysaccharides, Carbohydrate Metabolism - Glycolytic Pathway		
UNIT II		
Proteins - Classification, Physical and Chemical Properties, Sources, Biological Role and Value of Protein. Protein Metabolism - Protein Synthesis	**CLO 2**	**9**
UNIT III		
Lipids - Classification, Physical and Chemical Properties, Sources, Biological Role. Unit VI Lipid metabolism - -Oxidation. Nutritional Aspects of Lipids, Lipid Based Metabolic Diseases, Dyslipidemias, Lipid storage diseases	**CLO3**	**9**
UNIT IV		
Vitamins - Classification, Characteristics, Role of Vitamins in Metabolism, Deficiency Diseases, Minerals - Types, Absorption and Role of Minerals in Metabolism, Minerals Deficiency Diseases.	**CLO4**	**9**
UNIT V		
Nucleic Acids - DNA & RNA, Structure, Function and Metabolism, Genetic Disorders. Enzymes - Classification, Nomenclature, Mechanism of Enzyme Action, Enzyme Activity - Factors Affecting Enzyme Activity, Co- Enzymes and CoFactors	**CLO5**	**9**
Total Hours		**45**

Learning resources

Text Reading:

1. Allied Chemistry author by Dr. V. Veeraiyan
2. Biochemistry - author – U. Satyanarayan, U. chakrapani
3. Unified Chemistry by O.P. Agrawal
4. B.Sc. Chemistry Inorganic, Organic & Physical Chemistry by T.Krishna Murthy & B. Sambasiva Rao.
5. Text book of Physical Chemistry by Peter Atkins, Julio d. Paula
6. Kinetics and mechanism by J.W Moore and R.G Pearson
7. Text book of Organic Chemistry by Ferguson

References:

1. Industrial Chemistry by M.G. Arora
2. Inorganic Chemistry by Chopra and Kapoor
3. Chemical bonding and molecular geometry by R.J. gillepsy and P.L. Popelier

Online Resources/E-Learning Resources

1. https://www.coursera.org/learn/energy-metabolism

Course Curriculum

Name of the Program:	**BSc ND**	**Semester : 2**	**Level: UG**
Course Name	**Introduction to Nutritional Biochemistry-LAB**	**Course Code/ Course Type**	UBSND 114/MAJM
Course Pattern	**2024**	**Version**	1.0

Teaching Scheme				**Assessment Scheme**			
Theory	**Practical**	**Tutorial**	**Total Credits**	**Hours**	**CIA(Continuous Internal Assessment)**	**ESA (End Semester Assessment)**	**Practical/Oral**
	1		1	2	25		25

Pre-Requisite:

Course Objectives (CO):	The objectives of **Introduction to Nutritional Biochemistry** are: 1. To enable the student to understand the chemical characteristics of different classes of nutrients. **2.** To explain the process of digestion, absorption and metabolism of macronutrients and micronutrients. **3.** To understand the metabolic pathways involved in energy production, including glycolysis, the citric acid cycle, and oxidative phosphorylation. 4. To understand the chemistry of foods - composition of food, role of each component and their interaction. 5. To understand the functional aspects of food components and to study their role in food processing
Course Learning Outcomes (CLO):	Students would be able to: 1. The student will have knowledge of biochemical pathways of different nutrients, how they function biochemically and physiologically. 2. The student will get information about the role of diet and the nutrients present in them 3. To foster the ability to critically evaluate scientific literature in nutritional biochemistry. 4. To encourage independent research and the application of biochemical principles to real-world nutritional issues. 5. To explain the students the functional aspects of food components

Course Contents/Syllabus:
(All the Practical's carry equal weightage in Summative Assessment and equal engagement

Practical Plan

Practical Number	Practical	Week Number	Details	CLO	Hours
1	Practical 1: Qualitative Analysis of Carbohydrates	Week 1	Glucose -Principle and Applications	CLO1	2
2	Practical 2:	Week 2	Fructose and starches - Principle and Applications	CLO1	2
3	Practical 3:	Week 3	Lactose and Maltose- Principle and Applications	CLO 1	2
4	Practical 4: Identification test of proteins in food samples	Week 4	Albumin- Principle and Applications	CLO 2	2
5	Practical 5:	Week 5	Globulin- Principle and Applications	CLO12	2
6	Practical 6:	Week 6	Casein - Principle and Applications	CLO 2	2
7	Practical 7: Quantitative analysis of reducing sugars	Week 7	By DNSA method	CLO 3	2
8	Practical 8:	Week 8	Proteins - Biuret method	CLO3	2
9	Practical 9:	Week 9	Proteins- Kheldhal method and interpretations	CLO4/5	2
10	Practical 10: Determination of Titrable acidity of different food samples	Week 10,11	Fruit juices: Applications : Jams and Squashes, pH measurements and interpretation	CLO 4/5	4
11	Practical 11: Determination of pH and preparation of buffer solutions	Week 12	Preparation of Buffer solutions Measurement of pH	CLO	2
12	Practical 12:	Week 13,14,15	Preparation of percent solutions and claculations	CLO 4	6
			Total Hours		30

Learning Resources

Text Book:
1. Allied Chemistry author by Dr. V. Veeraiyan
    1. Biochemistry - author – U. Satyanarayan, U. chakrapani

Reference book
3. Unified Chemistry by O.P. Agrawal

Online Resources/E-Learning Resources
E-Course of ICAR, New Delhi

Course Curriculum

Name of the Program		BSc Nutrition and Dietetics		Semester		2	
Course		Diet and Disease Management		Course Code		UBSND115	
Teaching Scheme				Evaluation Scheme			
Lecture	Practical	Tutorial	Total Credits	IE (Internal Evaluation)	ETE (End Term Theory)	CPE/TW (Continuous Practical evaluation)	EPE (End term Practical exam)
2		-	2	20	30		
Pre-Requisite: XII th science and Fundamentals of Human Nutrition						Version: 1	
Course Objectives (CO):		The objectives of Diet and Disease Management are: 1. To recall key dietary guidelines for specific health conditions. 2. To comprehend the relationship between nutrition and specific diseases. 3. To develop a personalized meal plan for a person with various diseases and disorders that adheres to recommended nutrients and various restrictions. 4. To evaluate nutritional and dietary information and assess its relevance to disease management. 5. To create a comprehensive dietary guideline tailored to an individual's specific health needs.					
Course Learning Outcomes (CLO):		Students would be able to: 1. Recall fundamental and basic concepts of nutrition and their relevance to disease management. 2. Explain the principles and purposes of various nutritional assessment tools. 3. Apply knowledge of nutrition to create personalized diet plans for individuals with specific health conditions. 4. Analyze nutritional information, research studies, and dietary patterns to assess their impact on disease outcomes. 5. Develop comprehensive diet and lifestyle plans tailored to individuals with specific health concerns.					

Course Contents/Syllabus:
(All the Practical's carry equal weightage in Summative Assessment and equal engagement)

Descriptors/Topics	CLO	Hours
UNIT I		
Introduction to role of Diet in Disease Management: Role of Diet in Diseases Management, Types of Diet-Full Fluid Diet, Clear Fluid Diet, Full Diet	**CLO 1**	**6**
UNIT II		
Introduction to Metabolic Syndrome: Definition of Metabolic Syndrome, Risk factors for Metabolic Syndrome, Assessment of Metabolic Syndrome	**CLO 2**	**6**
UNIT III		
Constipation :Definition and Meaning of Constipation, Types of Constipation and Role of Fiber in constipation	**CLO3**	**6**

UNIT IV		
Obesity and Underweight :Definition of Obesity and Underweight, Assessment of Obesity and Underweight, Consequences of obesity and Underweight, Preparation of weight Loss and Weight gain Recipes and Plan	**CLO4**	**6**
UNIT V		
Dyslipidemia and Hypertension: Meaning of Dyslipidemia, Understanding various Parameters of Blood Pressure and Cholesterol levels, Role of DASH Diet and Mediterranean Diet. Neutropenic Diets: Definition of Neutropenic Diets, Role of Neutropenic Diet in fever and Auto immune Disorders.	**CLO5**	**6**
Total Hours		**30**

Text book:

1. Essential of food & Nutrition –Vol. 1 M. Swaminathan, Bappco,Bangalore.

2. Human Nutrition and Dietetics –Davidson S. Passmore

3. Normal and Therapeutic Nutrition- Corinne. H.Robinson & Marilyn Lawler

4. Contemporary Nutrition - Gordon M. Wardlaw, Paul Insel et, al., (2000) Mosby,Chicago

Reference books

1. Nutrition- concepts and controversies- Eleanor Whitney –Eighth Edition (2000)
2. Basic principles of Nutrition- Seema Yadav, First edition (1997)
3. Essentials of Nutrition and Diet therapy -Sue Rodwell Williams, fifth edition, Times Mirror Mosby College Publishing, 1990.
4. Understanding Nutrition -Whitney P.N. and Roes S.R., West Publication Co, 1996.

Online Resources/E-Learning resources

National Institutes of Health (NIH) (.gov)

https://www.nhlbi.nih.gov › health › metabolic-syndrome

Course Curriculum

Name of the Program:	BSc ND			Semester : 2		Level: UG	
Course Name	Diet and disease Management			Course Code/ Course Type		UBSCND 116/MAJM	
Course Pattern	2024			Version		1.0	
Teaching Scheme				Assessment Scheme			
Theory	Practical	Tutorial	Total Credits	Hours	CIA(Continuous Internal Assessment)	ESA (End Semester Assessment)	Practical/Oral
	1		1	2	25	-	25
Pre-Requisite:							

Course Objectives (CO):	The objectives of Diet and Disease Management are: 1. To recall key dietary guidelines for specific health conditions. 2. To comprehend the relationship between nutrition and specific diseases. 3. To develop a personalized meal plan for a person with various diseases and disorders that adheres to recommended nutrients and various restrictions. 4. To evaluate nutritional and dietary information and assess its relevance to disease management. 5. To create a comprehensive dietary guideline tailored to an individual's specific health needs.
Course Learning Outcomes (CLO):	Students would be able to: 1. Recall fundamental and basic concepts of nutrition and their relevance to disease management. 2. Explain the principles and purposes of various nutritional assessment tools. 3. Apply knowledge of nutrition to create personalized diet plans for individuals with specific health conditions. 4. Analyze nutritional information, research studies, and dietary patterns to assess their impact on disease outcomes. 5. Develop comprehensive diet and lifestyle plans tailored to individuals with specific health concerns.

Course Contents/Syllabus:
(All the Practical's carry equal weightage in Summative Assessment and equal engagement)

Practical Plan

Practical Number	Practical	Week Number	Details	CLO	Hours
1	Practical 1:	Week1	Calculation and Preparation of Clear Fluid Diet for Diarrhea Patient	CLO1	2
2	Practical 2:	Week 2	Calculation and Preparation of Full Fluid Diet for Mouth Ulcers Patient.	CLO1	2
3.	Practical 3:	Week 3	Calculation and Preparation of Soft Diet for Pregnant/Lactating Women	CLO1	2
4	Practical 4:	Week 4	Assessment of Risk Factors of Metabolic Syndrome,	CLO 1	2

5	Practical 5:	Week 5	Calculation of WHR, levels in 5 Patients vulnerable for Metabolic Syndrome	CLO 2	2
6	Practical 6:	Week 6	Calculation of Fasting Blood Sugar levels in 5 Patients vulnerable for Metabolic Syndrome	CLO 2	2
7	Practical 7:	Week 7	Calculation and Preparation of Recipe rich in Soluble Fiber for Irritable Bowel.	CLO1/ 2	2
8	Practical 8:	Week 8	Calculation and Preparation of Recipe rich in Insoluble Fiber for Chronic constipated patient.	CLO 2	2
9	Practical 9:	Week 9	Calculation and Preparation of Recipe rich in probiotics and prebiotics for improving gut microflora.	CLO 2	2
10	Practical 10:	Week 10	Calculation and Preparation of DASH Recipe for Hypertensive Patient.	CLO 3	2
11	Practical 11:	Week 11	Calculation and Preparation of Neutropenic Diet for Immunosuppressant patients	CLO4	2
12	Practical 12:	Week 12	Calculation and Preparation of For Weight loss.	CLO4	2
13	Practical 13:	Week 13	Calculation and Preparation of Recipe Weight Gain.	CLO 5	2
14	Practical 14:	Week 14	Calculation and Preparation of Keto Recipes	CLO 5	2
15	Practical 15	Week 15	Preparation of Dyslipidemia diet	CLO 5	2
			Total Hours		**30**

Text book:

1. Essential of food & Nutrition –Vol. 1 M. Swaminathan, Bappco,Bangalore
2. Human Nutrition and Dietetics –Davidson S. Passmore
3. Normal and Therapeutic Nutrition- Corinne. H.Robinson & Marilyn Lawler

Refernce books:

1. Nutrition- concepts and controversies- Eleanor Whitney –Eighth Edition (2000)
2. Basic principles of Nutrition- Seema Yadav, First edition (1997)
3. Essentials of Nutrition and Diet therapy -Sue Rodwell Williams, fifth edition, Times Mirror Mosby College Publishing, 1990.

Online Resources/E-Learning resources

National Institutes of Health (NIH) (.gov)

https://www.nhlbi.nih.gov › health › metabolic-syndrome

https://homescience10.ac.in/storage/pages/ecurriculum/Bsc-Hsc-Sem-4/THERAPEUTIC%20MODIFICATIONS%20OF%20A%20NORMAL%20DIET.pdf

Course Curriculum

Name of the Program:	BSc Nutrition and Dietetics				Semester		2
Course Name	Tools for Nutritional Assessment				Course Code /Type		UBSND 117/OE
Course Pattern	2024				Version		01
Teaching Scheme					Assessment Scheme		
Theory	Practical	Tutorial	Total Credits	Hrs	CIA (Continuous Internal Assessment)	ESA (End Semester Assessment)	Practical/ Oral
2			2	2	40	60	
Pre-Requisite: XII th Science and Fundamentals of Human Nutrition							
Course Objectives (CO):	The objective of Tools for Nutritional Assessment are: 1. To recall the key components of dietary assessment tools, including food diaries, 24-hour recalls, and food frequency questionnaires. 2. To recognize the names and purposes of common nutritional assessment tools. 3. To apply knowledge of nutritional assessment tools to select the most appropriate method based on the context, population, and research objectives. 4. To analyze data collected through nutritional assessment tools, identifying patterns or trends in dietary habits, nutrient intake, or anthropometric measurements 5. To evaluate the reliability and validity of nutritional assessment tools used in research studies or clinical settings.						
Course Learning Outcomes (CLO):	Students would be able to: 1. Students will be able to identify and name common nutritional assessment tools, such as food diaries, 24-hour recalls, anthropometric measurements, and biochemical assessments. 2: Explain the relationship between specific nutrients, dietary choices, and the prevention or management of diseases. 3: Apply knowledge of nutritional assessment tools to select the most appropriate method for specific scenarios. 4: Analyze data collected through nutritional assessment tools to identify patterns and trends. 5: Evaluate the reliability and validity of nutritional assessment tools.						

Course Contents/Syllabus:
(All the units carry equal weightage in Summative Assessment and equal engagement)

Descriptors/Topics	CLO	Hours
UNIT I		
Introduction to Nutritional Assessment: Definition of Nutritional Assessment and Its importance, Types of Nutritional Assessment Tools, Application of Nutritional Assessment in Case Study Portfolio.	**CLO 1**	**06**
UNIT II		
Dietary Assessment Tools: Food diaries and records, 24-hour dietary recalls,	**CLO 2**	**06**

Food frequency questionnaires, Dietary assessment in special populations		
UNIT III		
Anthropometric Measurements: Height, weight, and BMI measurements, Waist-to-hip ratio, Skinfold thickness measurements, Body Composition Analysis	**CLO 3**	**06**
UNIT IV		
Biochemical Assessment: Blood tests for nutrient status (e.g., iron, B 12,vitamin D) Interpretation of blood lipid profiles, Hormone Panel Test -Thyroid, Cortisol, Estrogen, Testosterone, Progesterone, Prolactin	**CLO 4**	**06**
UNIT V		
Clinical Assessment: Physical examination for nutritional status, Assessing signs and symptoms of malnutrition, Screening tools for nutritional risk, Interpretation of clinical assessment findings	**CLO5**	**06**
Total Hours		**30**

Learning resources

Textbooks:

1. Principles of Nutritional Assessment Rosalind S. Gibson Oxford University Press, 2005 - Health & Fitness - 908 pages
2. Williams' Basic Nutrition & Diet Therapy, 16th EditionAuthor : Staci Nix McIntosh

Reference Books:

1. Jellife DN, Assessment of Nutritional Status of the community.
2. Ritchie JA, Teaching Nutrition FAO, 1979.
3. Rajalakshmi R, Applied Nutrition, Oxford and JBH Publishers, 1981.

E resources:

1. https://www.cambridge.org/core/services/aop-cambridge-core/content/view/F0732A94E710DBF0AAB2AB2B7D5080E7/S0029665182000597a.pdf/biochemical_methods_in_nutritional_assessment.pdf (2024)
2. https://www.yumpu.com/en/document/view/65500126/nutrition-through-the-life-cycle-4th-edition-4th-ed

Course Curriculum

Name of the Program:	BSc Clinical Psychology	Semester : 2	Level: UG
Course Name	Role of Mindfulness and Counselling in Psychology	Course Code/ Course Type	UBSCP 114/ OE
Course Pattern	2024	Version	1.0

Teaching Scheme				Assessment Scheme			
Theory	Practical	Tutorial	Total Credits	Hours	CIA (Continuous Internal Assessment)	ESA (End Semester Assessment)	Practical/Oral
2			2	2	50		

Pre-Requisite: None

Course Objectives (CO):	The objectives of Role of Mindfulness and Counselling in Psychology are: 1. To understand the foundations of mindfulness and its relevance in the field of psychology and nutrition 2. To explore the concept of mindful eating and its benefits for physical and mental health 3. To examine the role of mindfulness in promoting a positive body image 4. To explore the impact of mindfulness on stress reduction and emotional well-being 5. To develop practical skills for incorporating mindfulness in daily living activities
Course Learning Outcomes (CLO):	Students would be able to: 1. Demonstrate a comprehensive understanding of the foundations of counselling and mindfulness and its relevance within the fields of psychology. 2. Evaluate and apply the concept of mindful eating, demonstrating an understanding of its potential benefits for both physical and mental health. 3. Examine the impact of mindfulness practices on stress reduction and emotional well-being, and demonstrate the ability to apply mindfulness techniques to manage stress effectively. 4. Develop practical skills for integrating mindfulness into daily living activities 5. Illustrating the application of mindfulness in various contexts such as work, relationships, and personal routines.

Course Contents/Syllabus:
(All the units carry equal weightage in Summative Assessment and equal engagement)

Descriptors/Topics	CLO	Hours
UNIT I		
Counselling Psychology: Definition and goals of counseling psychology, Historical development and evolution of counseling as a field, Basic skills for counselling, Counseling in different settings (schools, workplaces, healthcare, etc.)	**CLO1**	**9**
UNIT II		
Foundations of Mindfulness: Definition and core principles of mindfulness, Relevance of mindfulness for mental well-being in daily life, Mindfulness vs. meditation: Understanding the distinctions, Benefits of mindfulness ,Research findings on mental health, well-being and nutrition, Practical steps to adopting mindfulness	**CLO1**	**9**
UNIT III		
Mindfulness and Nutrition : Overview of mindfulness and its relevance to nutrition,Mindful vs. mindless eating: Understanding the difference, Mindful eating techniques: Savoring, slowing down, and appreciating food, Mindfulness and emotional eating: Identifying triggers and coping strategies,Mindfulness and digestion: The mind-gut connection, Mindful nutrition for specific health goals (weight management, energy, etc.)	**CLO2**	**9**
UNIT IV		
Mindfulness for Self-Growth: Cultivating self-awareness through mindfulness, Mindful listening and effective communication, Mindfulness in conflict resolution and building an empathetic relationship	**CLO3**	**9**
UNIT V		
Mindfulness for Mental Health: Developing mindfulness-based coping strategies for anxiety and stress reduction, Mindfulness for enhancing self-compassion and resilience,Mindfulness and emotion regulation: Understanding and managing emotions.	**CLO4**	**9**
Total Hours		**45**

Learning resources

Textbooks:

1. Brown, K. W., Creswell, J. D., & Ryan, R. M. (Eds.). (2015). Handbook of mindfulness: Theory, research, and practice. The Guilford Press.
2.Salgado, B. (2016). Real World Mindfulness for Beginners: Navigate Daily Life One Practice at a Time. Callisto Media, Inc.

Reference Books:

1. Collard, P. (2024). The Little Book of Mindfulness: 10 minutes a day to less stress, more peace. Octopus.

Online Resources/E-Learning Resources:

1.Historical Overview of Professional Counselling by Dr. Aaron Norton
https://youtu.be/8EWR_TYTm2Y?si=r_jpFXWtWmkLlYx9
2. Ways to Listen Better – Julian Treasure
https://youtu.be/cSohjlYQI2A?si=B1_qW-ptdk9eZsxc

3 How mindfulness changes the emotional life of our brains by Richard J. Davidson
https://youtu.be/7CBfCW67xT8?si=f6k5DVqXaWxftNy

Course Curriculum

Name of the Program:		BSc Nutrition and Dietetics		**Semester : 2**		**Level: UG**	
Course Name		Sales, Negotiations and Conflict Management; ND		**Course Code/ Course Type**		UBSND118/SEC	
Course Pattern		**2024**		**Version**		1.0	
Teaching Scheme					**Assessment Scheme**		
Theory	**Practical**	**Tutorial**	**Total Credits**	**Hours**	**CIA (Continuous Internal Assessment)**	**ESA (End Semester Assessment)**	**Practical/ Oral**
2			2	1	50		NA
Pre-Requisite: 12th Std							
Course Objectives (CO):				The objectives of Sales, Negotiations and Conflict Management are: 1. To recall fundamental principles and techniques in sales, negotiations, and conflict management. 2. To recognize the significance of effective sales strategies, negotiation tactics, and conflict resolution methods. 3. To apply theoretical concepts to real-world sales scenarios, negotiation situations, and conflict resolution challenges. 4. To analyze sales data, negotiation outcomes, and conflict dynamics to identify patterns and insights. 5. To evaluate the effectiveness of sales approaches, negotiation strategies, and conflict resolution techniques.		
Course Learning Outcomes (CLO):				Students would be able to: 1. Students will be able to identify foundational principles of sales management and essential selling skills. 2. Explain sales strategic planning, forecasting, and diverse selling situations. 3. Apply negotiation concepts and techniques effectively in sales contexts. 4. Analyze conflict types, causes, and resolution approaches in sales environments. 5. Evaluate conflict resolution strategies, including communication and negotiation techniques.		

Course Contents/Syllabus:
(All the units carry equal weightage in Summative Assessment and equal engagement)

Descriptors/Topics	CLO	Hours
UNIT I		
Essential Principles of Sales: Understanding Sales Management. Evolution, Nature, Role and Importance of Sales Management. Emerging Trends in Sales Management. Understanding relationship between Sales Management, Personal Selling and Salesmanship. Selling Vs Marketing. Concept of a Sales Job. Qualification needed and Roles played by Sales executive and managers. Understanding selling skills.	**CLO 1**	**6**
UNIT II		
Sales in Practice: Strategic Planning, basics of Sales Objectives, Sales Strategies and Tactics. Characteristics of an effective sales plan. Meaning, Usage and types of Sales Forecasts. Sales Forecasting approach, methods and measures for improvement. The selling process. Theories of Selling. Meaning, Process, Method and rationale behind preparing sales budget. Estimating Budget expenses. Defining buyer-seller Dyads. Understanding Models of Salesperson Buyer Dyadic relationship. Diversity of Personal-Selling Situations.	**CLO 2**	**6**
UNIT III		
Negotiation and Closure: Introduction, importance, nature and types of negotiation. Negotiation as a Game. Understanding BATNA (Best alternative to a negotiated agreement), ZOPA (zone of possible agreement) ZOCA (Zone of Comfortable agreement), PZone (Profit Zone), WOoNA (Worst Outcome of Negotiated Agreement), AoDR (Axis of Disput Resolution), ED (Exit Domain) and PoNoR (Point of No Return) in Negotiation. Methods and Approaches in Negotiation (Win-Win, Win-Loose and Loose-Loose). Process: Sequence – Phase – Frequency. Managing Process and Tricks of Countering. Barriers to Agreement. Ending the Agreement. Common Mistakes in Actions.	**CLO 3**	**6**
UNIT IV		
Navigating Conflict Management: Definition, Types, Nature and Cause of Conflict. Recognizing the Importance of Effectively Managing Conflict in Sales Environments. Competitive and Collaborative Approach to Conflict Resolution. Compromising and Accommodating as a Conflict Management Style. Avoidance in Conflict Resolution.	**CLO 4**	**6**
UNIT V		
Strategies for Conflict Resolution: Proactive Measures to Address Issues. The Role of Effective Communication and Finding Common Ground in Conflict Situations. Applying Negotiation Techniques. Mediation and Arbitration.	**CLO 5**	**6**
Total Hours		**30**

Learning resources

Textbooks:

1.ABC's Of Relationship Selling Through Service, By Charles M. Futrell, Raj Agnihotri, Mike Krush, PhD, Nicole Rourke, McGraw-Hill, 8th Edition

2.Sales Management: Analysis and Decision Making, by Thomas N. Ingram, Raymond W. LaForge, Ramon A. Avila, Routledge, 10th Ed, 2019

Reference Books:

1. Secrets Of Closing The Sale, by Zig Zigler, Embassy Books (1 January 2016)
2. The Art of Negotiation: How to get what you want (every time), by Tim Castle, Known Publishing, 1 March 2018
3. CONFLICT MANAGEMENT & ORGANISATIONAL EFFICIENCY, by Dr. Sanjeet Kumar, Bluerose Publishers Pvt. Ltd, First Edition, 19 April 2022

Online Resources/E-Learning Resources :1. How to Influence the Consumer Behavior to Drive Sales by Jonah Berger, by Institution: WOBI (edX)
2.Successful Negotiation: Essential Strategies and Skills, University of Michigan (edX)

Course Curriculum

Name of the Program:	**B. Sc. Nutrition and Dietetics**	**Semester : 1**	**Level: UG**
Course Name	**SPOKEN ENGLISH**	**Course Code/ Course Type**	USLAE113/AEC
Course Pattern	**2024**	**Version**	1.0

Teaching Scheme				**Assessment Scheme**			
Theory	**Practical**	**Tutorial**	**Total Credits**	**Hours**	**CIA (Continuous Internal Assessment)**	**ESA (End Semester Assessment)**	**Practical/ Oral**
2	-	-		2	20	-	30

Pre-Requisite:	
Course Objectives (CO):	The objectives of (SPOKEN ENGLISH) are: 1. To create an ambience for students to speak English fluently and fearlessly 2. To familiarize students with different speech acts 3. To comprehend English in real life situations 4. To enhance English fluency of the students 5. To increase their potentials to succeed in their professional and personal life.
Course Learning Outcomes (CLO):	By the end of the course, students will be able to— 1. Listen to English discourses with higher comprehension capacity, 2. Speak English in their life situations 3. Use English for practical purpose 4. Express themselves fluently in any unknown circumstances, and

	5. Defend communicative competence.

Course Contents/Syllabus:

(All the units carry equal weightage in Summative Assessment and equal engagement

Descriptors/Topics	CLO	Hours
UNIT I		
English Everywhere: Non- Conventional Pedagogical tools - Mobile, Television, News, Theatre, Famous Speeches, Friends etc.	**CLO1**	**06**
UNIT II		
Speech Acts: Greetings, introducing oneself, invitation, making request, expressing gratitude, complimenting and congratulating, expressing sympathy, apologizing, asking for information, seeking permission, complaining and expressing regret, idioms and phrases	**CLO2**	**06**
UNIT III		
English in real life situations: At the College office, Library, Department, Bank, Railway station, Post office, Police station, Travel agency, Interview	**CLO3**	**06**
UNIT IV		
Fluency Development: Vocabulary enhancement, Conversation skills, Role play, Commentary etc.	**CLO4**	**06**
UNIT V		
Speaking skills: Presentation skills, Public Speaking skills, GD skills, Interview skills, independent practice: Listening to BBC, CNN and paying attention to idiomatic usage of the language and different accent for speech acts that are used, Watch and appreciate English movies.	**CLO5**	**06**
Total Hours		**30**

Learning resources

Textbooks:

1. Collins, Stevens. Practical Everyday English: A Self-study Method of Spoken English for Upper Intermediate and Advanced Students. Montserrat Publishing; 5th Revised edition 2008
2. Mohan, Krishna and N.P. Singh. Speaking English Effectively. Delhi: Macmillan, 1995.

Reference Books:

1. SasiKumar. V and P.V. Dharmija. 1993. Spoken English: A Self-Learning Guide Conversation Practice. 34threprint. Tata McGraw – Hill. New Delhi.
2. Swets, Paul. W. 1983. The Art of Talking So That People Will Listen: Getting Through to Family, Friends and Business Associates. Prentice Hall Press. New York.

Online Resources/E-Learning Resources

1. https://learnenglish.britishcouncil.org/skills/speaking
2. https://learnenglish.britishcouncil.org/business-english

Course Curriculum

Name of the Program:		**B. Sc.**		**Semester : 1**		**Level: UG**	
Course Name		**IKS:** Indian Health Science		**Course Code/ Course Type**		**ACIKSSP101**	
Course Pattern		**2024**		**Version**		1.0	
Teaching Scheme					**Assessment Scheme**		
Theory	**Practical**	**Tutorial**	**Total Credits**	**Hours**	**CIA (Continuous Internal Assessment)**	**ESA (End Semester Assessment)**	**Practical/Oral**
2		-		2	20	30	-
Pre-Requisite:		**Nil**					
Course Objectives (CO):		The objectives of IKS: Indian Health Science are: 1. To know the historical development of Indian health systems. 2. To make students aware about the traditional way of maintaining the internal balance to prevent diseases. 3. Familiarize our unique mind body constitution and choosing the right lifestyle 4. To understand mind and its dynamics through knowledge of Ayurveda and Yoga. 5. To enable students for implementation of Indian Knowledge system in their life style.					
Course Learning Outcomes (CLO):		Students would be able to: 1. Understand the fundamental principles of Indian health systems and its core values.					

	2. Examine the significance of traditional way of maintaining the physical and mental balance. 3. Access our unique mind and body constitution for incorporating the healthy lifestyle. 4. Evaluate the various parameters of Ayurveda and Yoga for wellbeing of mind and its dynamics. 5. Enable for using the knowledge to maintain harmony between body and mind to achieve absolute mental health.

Course Contents/Syllabus:

(All the units carry equal weightage in Summative Assessment and equal engagement)

Descriptors/Topics	CLOs	Hrs
Unit I :		
Understanding human body: Introduction to Ayurveda, the Knowledge of Life, Health and treatment aspects in Ayurveda, Influence of Pancha maha bhuta on Internal environment of Human being, Understanding composition of Human body through the concept of Dosha Dhatu Mala, Understanding Prakruthi the Mind – Body Constitution.	1	6
Unit II:		
Ayurveda is concerned both with maintenance of good health and treatment of diseases. Basic concepts of Ayurveda. The three Gunas and Three Doshas, Pancha-mahabhuta and Sapta-dhatu. The importance of Agni (digestion). Six Rasas and their relation to Doshas. Ayurvedic view of the cause of diseases.	2	6
Unit III :		
Selected extracts from *Astāngahrdaya*(selections from *Sūtrasthāna*) and *Suśruta-Samhitā* (sections on plastic surgery, cataract surgery and anal fistula). The large pharmacopeia of Ayurveda. Charaka's description of a hospital. Hospitals in ancient and medieval India. How Ayurveda continued to flourish till 18/19th centuries. Surgical practices, inoculation. Current revival of Ayurveda and Yoga.	3	6
Unit IV :		
Definition, Meaning and objectives of Yoga, Relevance of yoga in modern age. Brief Introduction of Hatha yoga, Raja yoga, Karma yoga, Gyana Yoga, Bhakti yoga Understanding eight steps of Ashtanga yoga, Understanding Shatkriyas , the six cleansing procedures of Yoga	4	6
Unit V:		
Ethnic Studies, Life Science in Plants, Āyurveda, Integrated Approach to Healthcare, Medicine and Yoga, etc	5	6
Total Hours		**30**

Activity Plan

Assignment Number	Assignment Title	Week Number	Details	CLO	Hours
1	Poster making	1,2	Chart and Poster with presentations	**CLO 2**	3
2	Problem based learning	3,4	Problem based learning	**CLO 3**	3
3	MCQ	-	MCQ	**CLO5**	1

Learning Resource

Text Reading:

1. Introduction to Indian Knowledge System Concepts and applications by B. Mahadevan, Vinayak Bhat, Nagendra Pavana R. N.; 2022 (Prentice Hall of India).
2. Indian Knowledge Systems: Vol I and II, Kapil Kapoor and A. K. Singh; 2005 (D. K. Print World Ltd.).

References:

1. The Charaka Samhita
2. The Susruta Samhita
3. Teh Ashtanga Hridaya
4. Dr Deepak Chopra, Perfect Health--Revised and Updated: The Complete Mind Body Guide, Harmony publication, 2001
5. Vasant lad, Ayurveda, the Science of Self-healing: A Practical Guide: Science of Self-healing, lotus press, 1984
6. The Hatha yoga pradipika
7. The Patanjali yoga sutras
8. The Gheranda samhita

Online resource/ E-learning resource

1. https://swayam.gov.in/explorer?searchText=iks
   https://iksindia.org/book-list.php

COURSE CURRICULUM

Name of the Program:		**BSc CP**		**Semester : # II / IV***		**Level: UG**	
Course Name		Introductory Psychology		**Course Code/ Course Type**		USCPSY101/ MINOR	
Course Pattern		**2024**		**Version**		1.0	
Teaching Scheme					**Assessment Scheme**		
Theory	**Practical**	**Tutorial**	**Total Credits**	**Hours**	**CIA (Continuous Internal Assessment)**	**ESA (End Semester Assessment)**	**Practical/ Oral**
2	-	-	2	2	20	30	-
Pre-Requisite: XII Science / XII Arts – with Psychology as Major / Minor							
Course Objectives (CO):				The objectives of (Name of course) are: 1. To recall the fundamental meaning and definition of psychology, research methods in psychology, and various concepts and applications of psychology. 2. To recognize the role of personality, intelligence, genes, and environment in shaping individual differences. 3. To apply knowledge of memory types and memory techniques in various practical situations and applications. 4. To analyse the meaning and types of learning, as well as the effects of punishment and reinforcement on learning processes. 5. To evaluate the understanding of emotions, feelings, mood, and emotional expressions.			

Course Learning Outcomes (CLO):	Students would be able to: 1. Identify the fundamental concepts and components of psychology, 2. Explain the role of personality, intelligence, genes, and environment in shaping individual differences, 3. Apply their knowledge of psychology to various practical contextsand implementing memory techniques or learning strategies. 4. Analyse data related to psychological phenomena, including research findings, case studies, and real-world examples, to draw conclusions and make informed judgments 5. To apply concepts of emotions and feelingsand to understand cognitive functioning.

Course Contents/Syllabus:
(All the units carry equal weightage in Summative Assessment and equal engagement)

Descriptors/Topics	CLO	Hours
UNIT I		
Understanding Psychology: Meaning and Definition of Psychology, Research Methods in Psychology, and Applications of Psychology.	**CLO 1**	**06**
UNIT II		
Understanding Differences: personality and intelligence, role of genes and environment in individual differences.	**CLO 2**	**06**
UNIT III		
Memory: Types of memory, understanding and applications of various memory techniques.	**CLO 3**	**06**
UNIT IV		
Learning: Meaning and Types of learning, effect of punishment and Reinforcement in learning.	**CLO 4**	**06**
UNIT V		
Emotions and feelings: Understanding Emotions, feelings and mood, Emotional Expressions.	**CLO 5**	**06**
Total Hours		**30**

Learning resources

Textbooks:

1. Ciccarelli, S. K., & White, J. N. (2017). Psychology: An Exploration (4th Ed.). Pearson Education.
2. Morgan, C. T., & King, R. A. (2017). Introduction to Psychology: McGraw-Hill.

Reference Books:

1. Sternberg, R.J., Sternberg, K., and Jeff, M. (2011). Cognitive Psychology. Wadsworth.
2. Farmer, T. A., & Matlin, M. W. (2019). Cognition. John Wiley & Sons.

Online Resources/E-Learning Resources

1. https://youtu.be/XHIhkM1cAv4?feature=shared
2. https://youtu.be/imkbuKomPXI?feature=shared

COURSE CURRICULUM

Name of the Program:		B.Sc Nutrition and Dietetics		Semester : # III / *V		Level: UG	
Course Name		Know Your Drugs		Course Code/ Course Type		USPDH102 /Minor	
Course Pattern		2024		Version		1.0	
Teaching Scheme					Assessment Scheme		
Theory	Practical	Tutorial	Total Credits	Hours	CIA (Continuous Internal Assessment)	ESA (End Semester Assessment)	Practical/Oral
2	--	-		2	20	30	-
Pre-Requisite: Nil							
Course Objectives (CO):		The objectives of Know your drugs are: 1. To understand the basics of drugs. 2. To gain the knowledge of routes of drug administration and actions of drugs. 3. To understand the preventive medicine. 4. To understand Preventive medicine 5. To know the adverse drug reaction, toxicity, legal use of drug and over the counter product.					
Course Learning Outcomes (CLO):		Students would be able to: 1. Understand the basics of drugs. 2. Explore the knowledge of routes of drug administration and actions of drugs. 3. Know the general dosage forms. 4. Know the Preventive medicine 5. Know the adverse drug reaction, toxicity and legal use of drug					

Course Contents/Syllabus:

(All the units carry equal weightage in Summative Assessment and equal engagement)

Topic	CLO	Hours
UNIT I		
Introduction to basics of drugs Definitions and basic concepts of drugs, classification natureandsourceofdrugs,essentialdrugsconcepts.	CLO1	06
UNIT II		
Route of drug administration Routesofdrug administration, and basics of pharmacokinetics and pharmacodynamics.	CLO2	06
UNIT III		
Dosage forms: Introduction to dosage forms, classification and definitions **Introduction to Prescription** **Posology:** Definition, Factors affecting posology. Dose calculation of drugs	CLO3	06

based on age, body weight and body surface area.		
UNIT IV		
Preventive medicine: General principles of prevention and control of diseases such as cholera, SARS, Ebola virus, influenza, acute respiratory infections, malaria, chicken guinea, dengue, lymphatic filariasis, pneumonia, hypertension, diabetes mellitus, cancer, drug addiction-drug substance abuse	CLO4	06
UNIT V		
Adverse drug reaction (ADR), signs and symptoms of an adverse drug reaction, Diagnosis of ADR and treatment of ADR. Introduction to legal use of drug. Basic knowledge of Toxicity OTC Medication- Definition, OTC medication list & Counselling	CLO5	06

Learning Resource

Text Books

1. Modern Pharmacology with clinical Applications, by Charles R.Craig & Robert.
2. Sharma H. L., Sharma K. K., Principles of Pharmacology, Paras medical publisher
3. K.D.Tripathi. Essentials of Medical Pharmacology, JAYPEE Brothers Medical Publishers (P) Ltd, New Delhi.

Reference Books:

1. Mycek M.J, Gelnet S.B and Perper M.M. Lippincott's Illustrated Reviews- Pharmacology
2. Marry Anne K. K., Lloyd Yee Y., Brian K. A., Robbin L.C., Joseph G. B., Wayne A. K., Bradley R.W., Applied Therapeutics, The Clinical use of Drugs, The Point Lippincott Williams & Wilkins
3. Goodman and Gilman's, The Pharmacological Basis of Therapeutics.
4. Katzung B. G., Masters S. B., Trevor A. J., Basic and clinical pharmacology, Tata Mc Graw-Hill
5. Rang H. P., Dale M. M., Ritter J. M., Flower R. J., Rang and Dale's Pharmacology,.Churchil Livingstone Elsevier
6. Review of Preventive and Social Medicine (Including Biostatistics), Jain Vivek, 6th
7. Edition, 2014, ISBN: 9789351522331, JAYPEE Publications
8. Essentials of Community Medicine—A Practical Approach, Hiremath Lalita D,
9. Hiremath Dhananjaya A, 2nd Edition, 2012, ISBN: 9789350250440, JAYPEE Publications
10. H.C. Ansel et al., Pharmaceutical Dosage Form and Drug Delivery System, Lippincott
11. Williams and Walkins, New Delhi. Carter S.J., Cooper and Gunn's-Dispensing for Pharmaceutical Students, CBS publishers, New Delhi.
12. M.E. Aulton, Pharmaceutics, The Science& Dosage Form Design, Churchill Livingstone, Edinburgh.
13. Indian pharmacopoeia.
14. British pharmacopoeia.
15. Lachmann. Theory and Practice of Industrial Pharmacy,Lea & Febiger Publisher, The University of Michigan.

Online Resources/E-Learning Resources

1. https://jiwaji.edu/pdf/ecourse/pharmaceutical/General%20Pharmacology%20(B.Pharmacy%203%20Year%20Pharmacology%20III%203T4)%20By%20Dr.%20Bhagat%20Singh%20Jaiswal.pdf
2. https://www.ncbi.nlm.nih.gov/books/NBK507791/
3. https://www.slideshare.net/PranatiChavan/posology-posology-definition-factors-affecting-dose-selection-calculation-of-children-and-infant-doses-ppt
4. https://www.ncbi.nlm.nih.gov/books/NBK560924/

COURSE CURRICULUM

Name of the Program:	B.Sc Nutrition & Diatetics	**Semester: II**	**Level:** UG
Course Name	Entrepreneurship-New Venture Management	**Course Code/ Course Type**	USMEI101/MINOR
Course Pattern	2024	**Version**	1.0

Teaching Scheme					**Assessment Scheme**		
Theory	**Practical**	**Tutorial**	**Total Credits**	**Hours**	**CIA (Continuous Internal Assessment)**	**ESA (End Semester Assessment)**	**Practical/ Oral**
2	-	-	2	2	20	30	-

Pre-Requisite: None

Course Objectives (CO):	The objectives of the course are: 1. To recall the concept of entrepreneurship 2. To recognize methods of idea generation and explore opportunities 3. To apply success & failure stories of ventures to one's self enterprise 4. To analyze new venture concepts in terms of complexity of new venture initiation 5. To evaluate one's personal strength & write a comprehensive, solid, executable new venture business plan
Course Learning Outcomes (CLO):	Students would be able to: 1. To identify key entrepreneurship concepts, theories and principles, including knowledge of different types of entrepreneurs 2. To explain the product related opportunities and do feasibility checks 3. Apply knowledge of the various perspectives of entrepreneurship that reflect sustainable value for business and society through launches 4. Analyze the strategies of an existing business venture and leverage role of support organizations and small businesses 5. To evaluate industry relevant success stories and technology developments

Course Contents/Syllabus:
(All the units carry equal weightage in Summative Assessment and equal engagement)

Descriptors/Topics	**CLO**	**Hours**
UNIT I		
Entrepreneurship Defined: Concept and Definitions, Entrepreneurial Competencies, Factor Affecting Entrepreneurial Growth, Traits/Qualities of an Entrepreneurs, Steps of entrepreneurial process	**CLO 1**	**6**
UNIT II		
Products & Opportunities: Opportunity / Identification and Product	**CLO 2**	**6**

Selection, Product Selection, Conducting Feasibility Studies, Entry strategies, Intellectual Property		
UNIT III		
Small Enterprises and Enterprise Launching Formalities: Definition of Small Scale; Rationale; Objective; Scope; Role of SME in Economic Development of India; SME; Registration; NOC from Pollution Board; Machinery and Equipment Selection; **Project Report Preparation:** Specimen of Project Report; Project Planning and Scheduling using Networking Techniques of PERT / CPM; Methods of Project Appraisal - economic viability and market feasibility, requirements of financial institutions, projected financial statement preparation.	**CLO 3**	**6**
UNIT IV		
Role of Support Institutions and management of Small Business: Director of Industries; DIC; SIDO; SIDBI; Small Industries Development Corporation (SIDC);SISI; NSIC; NISBUED; State Financial Corporation SFC; Information : assistance from different organizations in setting up a new venture, technology parks, industrial corporations, directorate of industries / cottage and small scale industries, SISI, Khadi & Village Industries Corporation / Board; DGS & DNSIC, export & import, how to apply for assistance – procedure, forms, procedures for obtaining contract from Railways, Defence, P & T etc., SIDBI; Laws : Liabilities under the Factories Act, Shops & Establishment Act, Industrial Employment (Standing Orders) Act, Environment Protection Act, Sale of Goods Act, maintenance & submission of statutory records & returns, understanding labour - management relationship	**CLO 4**	**6**
UNIT V		
Case Studies: Diagnostic case studies of successful / unsuccessful entrepreneurs, key variables explaining success / failures, industrial sickness, industrial reconstruction, technology obsolescence, technology, transfer	**CLO 5**	**6**
Total Hours		**30**

Learning resources

Textbooks:

1. Holt H. David (2005), Entrepreneurship New Venture Creation, Prentice-Hall
2. Histrich D. Robert and Peters P. Michal Shepherd A Dean (2007), Entrepreneurship, McGraw Hill
3. Suhail Abidi and Manoj Joshi, The VUCA Company, 2016, Jaico Publishing India, ISBN 978-81-8495-662-7

Reference Books:

1) Sharma, Apoorv and Shukla, Balvinder and Joshi, Manoj, Can Business Incubators Impact the Start-Up Success? India Perspective! (October 20, 2014). Available at SSRN: https://ssrn.com/abstract=2511944 or http://dx.doi.org/10.2139/ssrn.2511944
2) Sharma, Apoorv and Joshi, Manoj and Shukla, Balvinder, Is Accelerator an Option? Impact of Accelerator in Start-up Eco-System! (May 19, 2014). Available at SSRN: https://ssrn.com/abstract=2438846 or http://dx.doi.org/10.2139/ssrn.2438846
3) Joshi, Manoj and Srivastava, Apoorva and Shukla, Balvinder, International Lessons on Innovation for Socio Economic Development in India (October 13, 2014). Available at SSRN: https://ssrn.com/abstract=2509060 or http://dx.doi.org/10.2139/ssrn.2509060

Online Resources/E-Learning Resources:

1. Entrepreneurship Essentials, HBS:
https://online.hbs.edu/courses/entrepreneurship-essentials/
2. New Venture Finance: Startup Funding for Entrepreneurs:
https://www.coursera.org/learn/startup-funding?specialization=business-entrepreneurship
3. Developing New Business Ventures (Online): From Ideation to Successful Launch:
https://execed.business.columbia.edu/programs/developing-new-business-ventures-online