

Pimpri Chinchwad Education Trust's

Pimpri Chinchwad University

Sathe, Pune - 412106



PCET's
**Pimpri
Chinchwad
University**

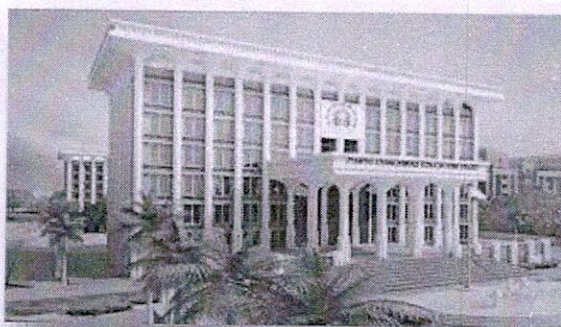
Learn | Grow | Achieve

Curriculum Structure

B. Sc Nutrition and Dietetics

(2023-2027)

School of Sciences



Effective from Academic Year 2023-24

BSc Nutrition and Dietetics

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.

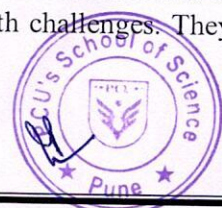
Vision and Mission of Program:

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.

We strive to provide an innovative and comprehensive curriculum that integrates theoretical knowledge with practical experience, research opportunities, and professional development. Our program emphasizes critical thinking, problem-solving, and communication skills, as well as cultural sensitivity and ethical considerations.

Through our program, students will develop a deep understanding of the role of nutrition and dietetics in promoting optimal health, preventing chronic diseases, and addressing global health challenges. They



will also learn to apply this knowledge in various settings, including clinical, community, food service, and research.

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.
5. To apply continual sustainable professional development for self-empowerment with strategic characteristics of a competent dietitian and endorse a reflective approach to practice, including commitment to professional behaviour and continued through lifelong learning activities.

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.

BSc Nutrition and Dietetics



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.
11. Act as informed and critically discerning participants within the community of scholars, as citizens and in the work force.

Programme Specific Outcomes (PSOs):

1. Nutrition Knowledge - Graduates will have a comprehensive understanding of the scientific basis of human nutrition, including the roles of macro and micronutrients in health and disease, and the physiological processes involved in nutrient metabolism.
2. Nutrition Assessment - Graduates will be able to use appropriate tools and methods to assess an individual's nutritional status, analyze dietary intake data, and identify nutrition-related risk factors.
3. Nutrition Intervention - Graduates will have the skills and competencies necessary to design and implement appropriate nutrition interventions for individuals and populations, including meal planning, nutritional supplementation, and therapeutic diets.
4. Nutrition Education - Graduates will be able to develop and deliver nutrition education programs for individuals and communities, using evidence-based practices and culturally appropriate approaches.
5. Research - Graduates will be able to critically evaluate nutrition research, design and conduct research studies, and analyze and interpret data to contribute to the advancement of the field.
6. Professionalism - Graduates will adhere to the highest ethical and professional standards, including maintaining confidentiality, respecting cultural and individual differences, and advocating for the rights and needs of their clients.
7. Communication - Graduates will have effective communication skills, including the ability to communicate nutrition information to diverse audiences using a variety of media and platforms, and to work collaboratively with healthcare professionals, researchers, and community stakeholders.



INDEX

Sr. No.	Content	Pg. No.
1.	Curriculum Framework	1
2.	Tentative list of Electives. Open Electives, Life Skill Courses, Proficiency Foundation Courses, HSMC Courses	7
3.	Course Code Nomenclature	8



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

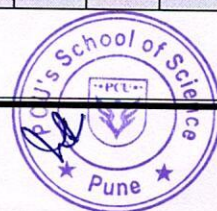


Sr. No.	Type of course	No. of Courses	Total Credits	
			No	%
1	Major	55	111	63.4
2	Minor	5	10	5.7
3	Open Electives	3	6	3.4
4	Ability Enhancement Courses (Audit Courses)	7	4	2.2
5	Skill Enhancement Courses	5	8	4.5
6	Vocational Skill Course	2	3	1.7
7	Summer Internship/On Job Training	2	18	10.2
8	Field Project	2	8	4.5
9	Indian Knowledge System	2	3	1.7
10	Co Curriculum	2	2	1.1
12	Value Education Course (Audit Courses)	4	2	1.1
	Total	89	174	100.0

CREDIT DISTRIBUTION: SEMESTER WISE

Sr. No.	Type of course	No. of Credits/Semester								Total
		1	2	3	4	5	6	7	8	
1	Major	13	14	9	18	21	13	16	6	110
2	Minor Stream	-	-	4	2	2	2	-	-	10
3	Open Electives	2	2	2	-	-	-			6
4	Ability Enhancement Courses (Audit course)	2	2	AC	AC	AC	AC			4
5	Skill Enhancement Courses	1	2	3	-	-	2			8
6	Vocational Skill Course	-	-	-	-	AC	-		3	3
7	Summer Internship/On Job Training						6		12	18
8	Field Project			4				4		8
9	Indian Knowledge System (Audit Course)	2	1							3
10	Co Curriculum	1	1							2
12	Value Education Course	2	-	AC	AC	-	AC			2
Total		23	22	22	20	23	23	20	21	174

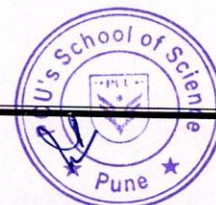
BSc. Nutrition & Dietetics



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
NUTR101	MAJM	Fundamentals of Human Nutrition	1	1		2	2	30	70		100
UBSND 102	MAJM	Fundamentals of Human Nutrition-Lab			1	2	1	25		25	50
NUTR102	MAJM	Basics of Human Anatomy	2	0	0	2	2	30	70		100
UBSND103 P	MAJM	Basics of Human Anatomy- Lab			1	2	1	25		25	50
CHPN101	MAJM	Community and Public Health Nutrition	2	0		2	2	30	70		100
UBSND105	MAJM	Community and Public Health Nutrition-lab			1	2	1	25		25	50
FSFP101	MAJM	Basic Principles of Food Science	1		-	1	1	30	70		100
UBSND107 E	MAJM	Basic Principles of Food Science -Lab	-		1	2	1	25		25	50
FSFP102	MAJM	Food Chemistry	1			1	1	30	70		100
UBSND119 A	MAJM	Food Chemistry- Lab			1	2	1	25		25	50
NUTR103	OE	Open Elective- Food Psychology	2			2	2	30	70		100
CSE 104	SEC	Basics of Computer Applications			1	2	1	25		25	50
FENG 101	AEC	Functional English	2			2	2	30	70		100
IFS101	IKS	Indian Family System: The Concept, Practices and Current Relevance	2			2	2	30	70		100
YOGA 101	CC	Basics of Asanas			1	2	1	25		25	50
EVS101	VEC	Environment and Sustainable Studies	2			2	2	30	70		100
Total			15	1	7	30	24	445	630	175	1250

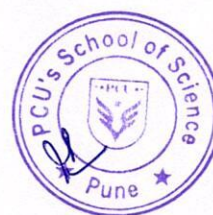
BSc. Nutrition & Dietetics



Open Elective I

Course Code	Course Type	Subject Name
NUTR103	OE	Food Psychology
MGMT 102	OE	Business Environment
DOE 101	OE	Materials and Processes for Beginners

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



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
NUTR 104	MAJ M	Nutrition and Metabolism	1	1	-	2	2	40	60		100
UBSND 111	MAJ M	Nutrition and Metabolism-LAB			1	2	1	25		25	50
NUTR105	MAJ M	Basics of Human Physiology	3			3	3	40	60		100
FSFP 103	MAJ M	Advance Principles of Food Science	2	-		2	2	40	60		100
UBSND 118 P	MAJ M	Advance Principles of Food Science-Lab			1	2	1	25		25	50
UBSND113	MAJ M	Introduction to Nutritional Biochemistry	2	-		2	2	40	60		100
UBSND113P	MAJ M	Introduction to Nutritional Biochemistry-LAB			1	2	1	25		25	50
UBSND115	MAJ M	Diet and Disease Management	1			1	1	40	60		100
DIET101	MAJ M	Diet and Disease Management-LAB		-	1	2	1	25		25	50
UBSND 107	OE	Open Elective - Tools of Nutritional Assessment	2			2	2	40	60		100
MKT101	SEC	Sales, Negotiations and Conflict Management	2	-		2	2	40	60		100
FENG 102	AEC	Effective Written Communication	2	-	-	2	2	50			50
FA101	CC	Fine Arts			1	2	1	25		25	50
IKS 102	IKS	Ancient Indian Wisdom: Spiritual Heritage	1			1	1	40	60		100
Total			16	1	4	26	22	495	480	125	1100



Open Elective II

Course Code	Course Type	Subject Name
NUTR 107	OE	Tools of Nutritional Assessment
UBSCP 115	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 E



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	OE	Open Elective – III	2			2	2	50			50
	MIN	Minor I	2			2	2	20	30		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 206	SEC	Post Harvest Management of Foods-LAB			1	2	1	25		25	50
UBSND 207	MAJM	Introduction to Biostatistics; ND	2	-	-	2	2	20	30		50
ACUHV201	VEC	Understanding Harmony	2			2	-	50			50
UFL201A	AEC	Foreign Language	2	-		2	-	50			50
UBSND 208	FP	Field Project-Nutrition and Dietetics		-		6	4	50		50	100
Total			19	0	2	29	22	410	240	100	750



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

Course Code	Course Type	Subject Name
UFL201A	AEC	German
UFL201B	AEC	Japanese

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



BSc (Nutrition and Dietetics) Curriculum Structure Semester IV

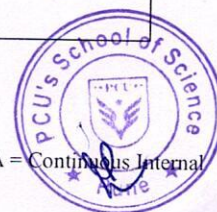
		Semester – IV	Teaching Scheme					Evaluation Scheme			
Course Code	Category	Course Name	Th	Tut	PR	Hrs.	Cr	CIA	ESA	PR/OR	Total
UBSND 209	MAJM	Metabolic and Lifestyle Disorders	3	-	-	3	3	40	60		100
UBSND 210	MAJM	Metabolic and Lifestyle Disorders-Lab			1	2	1	25		25	50
UBSND 211	MAJM	Nutrition in Life Stages-Adolescence till Geriatrics	3	-	-	3	3	40	60		100
UBSND 212	MAJM	Food Microbiology	3	-		3	3	40	60		100
UBSND 213	MAJM	Food Microbiology-LAB			1	2	1	25		25	50
UBSND 214	MAJM	Maternal and Child Nutrition	2		-	2	2	20	30		50
UBSND 215	MAJM	Personal and Fitness Training	2	-	-	2	2	20	30		50
UBSND 216	MAJM	Personal and Fitness Training-LAB			1	2	1	25		25	50
UBSND 217	MAJM	Diet and Immunity	2			2	2	20	30		50
	MIN	Minor III	2	-		2	2	20	30		50
UFL202	AEC	Foreign Language-II	2	-		2	-	50			50
ACCOI201	IKS	Constitution of India	1	-		1	-	50			50
Total			20	0	3	26	20	375	300	75	750

Foreign Language

Course Code	Course Type	Subject Name
UFL202A	AEC	German
UFL202B	AEC	Japanese

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 & Dietetics



BSc (Nutrition and Dietetics) Curriculum Structure Semester V

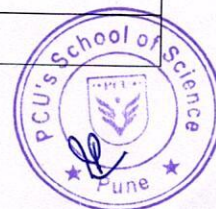
		Semester – V	Teaching Scheme					Evaluation Scheme			
Course Code	Category	Course Name	Th	Tut	PR	Hrs.	Cr	CI A	ES A	PR/OR	Total
UBSND 301	MAJM	Basics of Critical Care and Illness	4	-	-	4	4	40	60		100
UBSND 302	MAJM	Clinical and Therapeutic Nutrition	3	-		3	3	40	60		100
UBSND 303	MAJM	Clinical and Therapeutic 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			2	-	50			50
UFL301	AEC	Foreign Language	2	-		2	-	50			50
Total			19	01	3	26	23	390	360	50	800

UBSND 308- Elective I

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

Foreign Language

BSc Nutrition and Dietetics



Course Code	Course Type	Subject Name
UFL301A	AEC	German
UFL301B	AEC	Japanese

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



BSc (Nutrition and Dietetics) Curriculum Structure Semester VI

		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 Public Health <i>Statistical Analysis</i>	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 V	2	-	-	2	2	20	30		50
UBSND 315	SEC	Understanding Alternative Medicines	2	-		2	2	20 <i>50</i>	30		50
ACUHV101	VEC	Professional Ethics	2	-	-	2	-	50			50
UFL302	AEC	Foreign Language-IV	2	-		2	-	50			50
UBSND 316	INTR	Summer Internship; Nutrition and Dietetics					6	100		100	200
Total			15	00	2	19	23	430	270	150	850

UBSND 308- 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

Course Code	Course Type	Subject name
UFLA	AEC	German
UFLB	AEC	Japanese

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



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	ES A	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 Exam



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/M OOC	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	-	-			12	200		200	400
Total			5	00			21	350		250	600

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	U	Under graduate
2	B	Bachelor
3	S	Science
4	N	Nutrition
5	D	Dietetics
6 and 7	01,02,03, -----	Subject Code
	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
	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



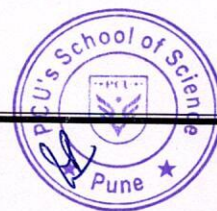
LIST OF MINOR COURSES

	School of Engineering & Technology (ET)					
	List of Minor Courses					
	Web Development (WD)					
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)					
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 Automation	# V/*VII	2	2	20	30
UETRP105	RP Minor5: RPA Tool	# VI/*VIII	2	2	20	30



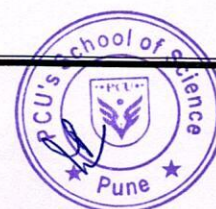
	Artificial intelligence & Machine Learning (ML)					
Sr.no	Name of Course	Teaching Scheme			Evaluation Scheme	
		Sem	Credits	Hours	CIA	ESA
UETML101	ML Minor1: Artificial Intelligence	# II/ *IV	2	2	20	30
UETML102	ML Minor2: Machine Learning	# III/ *V	2	2	20	30
UETML103	ML Minor3: Natural Language Processing	# 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)					
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
	Media School (MS)					
	List of Minor Courses					
	Media Communications					
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

BSc. Nutrition & Dietetics



	School of Sciences (SC)					
	Psychology (PSY)					
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)					
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
	Pune Design School (SD)					
	Design Thinking and Methodologies (DM)					
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

BSc. Nutrition & Dietetics

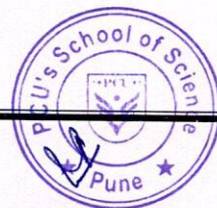


USDDM105	DM Minor5: Digital Tools for 3D design	# VI/*VIII	2	2	20	30
School of Management (SM)						
Economics & Finance (FE)						
Course Code	Name of Course	Teaching Scheme			Evaluation Scheme	
		Sem	Credits	Hours	CIA	ESA
USMFE101	FE Minor1: Micro-economics	# II/ *IV	2	2	20	30
USMFE102	FE Minor2: Fundamentals of Accounting	# III/ *V	2	2	20	30
USMFE103	FE Minor3: Principles of Finance	# IV/*VI	2	2	20	30
USMFE104	FE Minor4: Cost and Management Accounting	# V/*VII	2	2	20	30
USMFE105	FE Minor5: Macro economics	# VI/*VIII	2	2	20	30
Entrepreneurship and Innovations (EI)						
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
School of Pharmacy (SP)						
Drugs & Healthcare (DH)						
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

BSc. Nutrition & Dietetics



USPDH104	DH Minor4: Drug Discovery	# V/*VII	2	2	20	30
USPDH105	DH Minor5: Forensic Science	# VI/*VIII	2	2	20	30
SoET BCA and BSc						
Software Application Design and Development (AD)						
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)						
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
School of Liberal Arts (SL)						
English Literature (E)						
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)

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



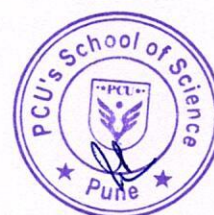
Course Nomenclature

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
	UETCS101	CS Minor1: Cyber Ethics, Cyber Law and Cyber Policy

BSc. Nutrition & Dietetics



Cyber Security (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 Minor2 Learning English With Shakespeare-Hamlet (Minor-II)



BSc. Nutrition & Dietetics

Pimpri Chinchwad Education Trust's
Pimpri Chinchwad University
Sathe, Pune - 412106



PCET's
**Pimpri
Chinchwad
University**

Learn | Grow | Achieve

Curriculum Structure

B. Sc Nutrition and Dietetics

(2024-2028)

School of

Sciences



Effective from Academic 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.

We strive to provide an innovative and comprehensive curriculum that integrates theoretical knowledge with practical experience, research opportunities, and professional development. Our program emphasizes critical thinking, problem-solving, and communication skills, as well as cultural sensitivity and ethical considerations.

Through our program, students will develop a deep understanding of the role of nutrition and dietetics in promoting optimal health, preventing chronic diseases, and addressing global health challenges. They will also learn to apply this knowledge in various settings, including clinical, community, food service, and research.

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. Nutrition Knowledge - Graduates will have a comprehensive understanding of the scientific basis of human nutrition, including the roles of macro and micronutrients in health and disease, and the physiological processes involved in nutrient metabolism.
2. Nutrition Assessment - Graduates will be able to use appropriate tools and methods to assess an individual's nutritional status, analyze dietary intake data, and identify nutrition-related risk factors.
3. Nutrition Intervention - Graduates will have the skills and competencies necessary to design and implement appropriate nutrition interventions for individuals and populations, including meal planning, nutritional supplementation, and therapeutic diets.
4. Nutrition Education - Graduates will be able to develop and deliver nutrition education programs for individuals and communities, using evidence-based practices and culturally appropriate approaches.
5. Research - Graduates will be able to critically evaluate nutrition research, design and conduct research studies, and analyze and interpret data to contribute to the advancement of the field.
6. Professionalism - Graduates will adhere to the highest ethical and professional standards, including maintaining confidentiality, respecting cultural and individual differences, and advocating for the rights and needs of their clients.
7. Communication - Graduates will have effective communication skills, including the ability to communicate nutrition information to diverse audiences using a variety of media and platforms, and to work collaboratively with healthcare professionals, researchers, and community stakeholders.



INDEX

Sr. No.	Content	Pg. No.
1.	Curriculum Framework	1
2.	Tentative list of Electives. Open Electives, Life Skill Courses, Proficiency Foundation Courses, HSMC Courses	7
3.	Course Code Nomenclature	8



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

Sr. No.	Type of course	No. of Courses	Total Credits	
			No	%
1	Major	42	113	67.6
2	Minor	5	10	6.06
3	Open Electives	3	6	3.46
4	Ability Enhancement Courses(Audit Courses)	7	-	-
5	Skill Enhancement Courses	2	9	5.38
6	Vocational Skill Course	2	3	1.74
7	Summer Internship/On Job Training	2	18	10.40
8	Field Project	2	8	4.62
9	Indian Knowledge System(Audit Courses)	1	-	-
10	Value Education Course (Audit Courses)	3	-	-
	Total	69	167	100.0

CREDIT DISTRIBUTION: SEMESTER WISE

Sr. No.	Type of course	No. of Credits/Semester								Total
		1	2	3	4	5	6	7	8	
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	-	-	-	-	1	-		3	3
7	Summer Internship/On Job Training						6		12	18
8	Field Project			4				4		8
9	Indian Knowledge System (Audit Course)		2							-
12	Value Education Course	2	-	2	2	2	2			-
Total		20	20	20	20	23	23	20	21	167

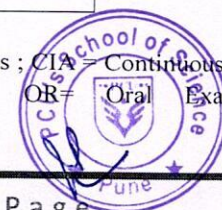
BSc (Nutrition and Dietetics) Curriculum Structure Semester I

		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
UBSND107E	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
USLAE 107	AEC	Modern Grammar and Usage	1			1	-	50			50
Total			17		4	25	19	410	240	200	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 Exam



BSc (Nutrition and Dietetics) Curriculum Structure Semester II

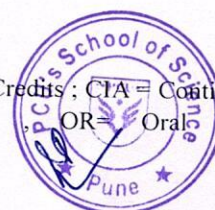
		Semester – II	Teaching Scheme					Evaluation Scheme			
Course Code	Category	Course Name	Th	Tut	PR	Hrs.	Cr	CIA	ESA	PR/OR	Total
UBSND 110	MAJM	Nutrition and Metabolism	3		-		3	40	60		100
UBSND 111	MAJM	Nutrition and Metabolism-LAB			1	2	1	25		25	50
UBSND 112	MAJM	Basics of Human Physiology	4			4	4	40	60		100
UBSND113	MAJM	Introduction to Nutritional Biochemistry	3	-		3	3	40	60		100
UBSND114	MAJM	Introduction to Nutritional Biochemistry-LAB			1	2	1	25		25	50
UBSND115	MAJM	Diet and Disease Management	2				2	20	30		
UBSND116	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, Negotiations and Conflict Mgt; ND	1	-		1	1	50			
USLAE 113	VEC	Spoken English	1	-	-	1	-	50			50
ACIKSP101	IKS	IKS; Indian Health Systems	1	-	-	1	-	50			50
Total			19	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

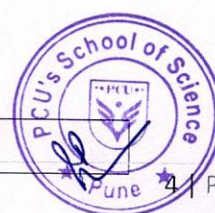
Abbreviations: Course Abbreviation; Th = Theory, Tut = Tutorial, Pr = Practical, Hrs = Hours, Cr = Credits; CIA = Continuous Internal Assessment, ESA = End Semester Assessment, PR = Practical Exam, OR = Oral Exam

PCET'S Pimpri Chinchwad University/School of Sciences/ BSc.Nutrition and Dietetics



		Semester – III	Teaching Scheme					Evaluation Scheme			
Course Code	Category	Course Name	Th	Tut	PR	Hrs.	Cr	CIA	ESA	PR/OR	Total
UBSND 201	MAJ M	Essentials of Meal Planning	3	-		3	3	40	60		100
UBSND 202	MAJ M	Essentials of Meal Planning-LAB			1	2	1	25		25	50
UBSND 203	MAJ M	Nutrition in Life Stages- Conception till Childhood	3	-		3	3	40	60		100
UBSCP 205/ UBSND 204	MAJ M-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 206	SEC	Post Harvest Management of Foods-LAB			1	2	1	25		25	50
UBSND 207	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	2	-		2	-	50			50
UBSND 208	FP	Field Project-Nutrition and Dietetics		-		6	4	50		50	100
Total			17	0	2	27	20	390	210	100	750

Course Code	Course Type	Subject name
-------------	-------------	--------------



UBSCP 205	OE	Gender Equality and Equity
UBSND 204	OE	Growth Monitoring and Health Policies

**Open
Elective III**

Course Code	Course Type	Subject name
UFLI 201A	AEC	German
UFLI 201 B	AEC	Japanese

**Foreign
Language**

**Abbrevia
tions:**

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



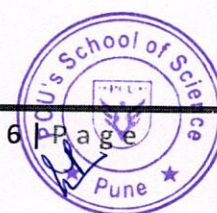
		Semester – IV	Teaching Scheme					Evaluation Scheme			
Course Code	Category	Course Name	Th	Tut	PR	Hrs.	Cr	CIA	ESA	PR/OR	Total
UBSND 209	MAJM	Metabolic and Lifestyle Disorders	3	-	-	3	3	40	60		100
UBSND 210	MAJM	Metabolic and Lifestyle Disorders- Lab			1	2	1	25		25	50
UBSND 211	MAJM	Nutrition in Life Stages- Adolescence till Geriatrics	3	-	-	3	3	40	60		100
UBSND 212	MAJM	Food Microbiology	3	-		3	3	40	60		100
UBSND 213	MAJM	Food Microbiology-LAB			1	2	1	25		25	50
UBSND 214	MAJM	Maternal and Child Nutrition	2		-	2	2	20	30		50
UBSND 215	MAJM	Personal and Fitness Training	2	-	-	2	2	20	30		50
UBSND 216	MAJM	Personal and Fitness Training-LAB			1	2	1	25		25	50
UBSND 217	MAJM	Food Types and Facts <i>Old Diet and Immunity</i>	2			2	2	20	30		50
	MIN	Minor III	2	-		2	2	20	30		50
UFLII 202	AEC	Foreign Language	2	-		2	-	50			50
ACCOI201	IKS	Constitution of India	1	-		1	-	50			50
Total			20	0	3	26	20	375	300	75	750

BSc (Nutrition and Dietetics) Curriculum Structure Semester IV

Foreign Language

Course Code	Course Type	Subject name
UFLII 202A	AEC	German
UFLII 202 B	AEC	Japanese

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



		Semester – V	Teaching Scheme					Evaluation Scheme			
Course Code	Category	Course Name	Th	Tut	PR	Hrs.	Cr	CI A	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
	VSC	Aptitude and logical reasoning	2				-	50			50
UFLIII 301	AEC	Foreign Language	2	-		2	-	50			50
Total			19	01	3	26	23	370	330	50	750

BSc (Nutrition and Dietetics) Curriculum Structure Semester V



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

**UBSND
308-
Elective I**

Course Code	Course Type	Subject name
UFLIII 301A	AEC	German
UFLIII 301 B	AEC	Japanese

**Foreign
Language**

**Abbrevia
tions:** 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



		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 Gen Health Statistical Analysis in Nutrition	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	2	-		2	-	50			50
UBSND 316	INTR	Summer Internship; Nutrition and Dietetics					6	100		100	200
Total			15	00	2	19	23	470	240	150	800

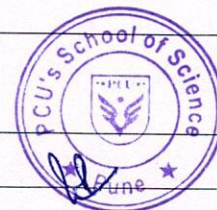
BSc (Nutrition and Dietetics) Curriculum Structure Semester VI

UBSND 308- 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

Course Code	Course Type	Subject name



UFLIV 302 A	AEC	German
UFLIV 302 B	AEC	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	ES A	PR/OR	Total
UBSND 401	MAJ M	Understanding Nutrition Global	3	-	-	3	3	40	60		100
UBSND 402	MAJ M	Understanding Nutrition-LAB Global			1	2	1	25		25	50
UBSND 403	MAJ M	Scientific Writing and Research Methods	2	1	-	3	3	40	60		100
UBSND 404	MAJ M	Food Laws and Regulations	3	-	-	3	3	40	60		100
UBSND 405	MAJ M	Diet and Sports	3	-	-	3	3	40	60		100
UBSND 406	MAJ M	Product Development and formulations	2	-	-	2	2	20	30		50
UBSND 407	MAJ M	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

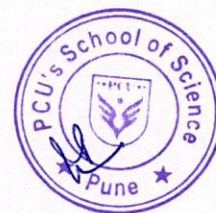
Abbreviations: Course Abbreviation; Th = Theory , Tut = Tutorial, Pr = Practical , Hrs = Hours , Cr = Credits ; CIA = Continuous Internal Assessment , ESA = End Semester Assessment , PR = Practical Exam , OR= Oral Exam



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	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	-	-			12	200		200	200
Total			5	00			21	250		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

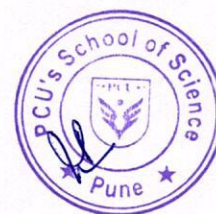


List of Minors

Course Code	Name of Course	Teaching Scheme			Evaluation Scheme	
		Sem	Credits	Hours	CIA	ESA
USPDH101	Health and hygiene	II	2	2	20	30
USPDH102	Know your drugs	III	2	2	20	30
USPDH103	Complementary and alternative medicine	IV	2	2	20	30
USPDH104	Drug Discovery	V	2	2	20	30
USPDH105	Forensic Science	IV	2	2	20	30

Course Code	Name of Course	Teaching Scheme			Evaluation Scheme	
		Sem	Credits	Hours	CIA	ESA
USCPSY101	Introductory Psychology	II	2	2	20	30
USCPSY102	Foundations of Social Psychology	III	2	2	20	30
USCPSY103	Theories of Personality Development	IV	2	2	20	30
USCPSY104	Industrial Psychology	V	2	2	20	30
USCPSY105	Mindfulness and Mental Health	VI	2	2	20	30

Course Code	Name of Course	Teaching Scheme			Evaluation Scheme	
		Sem	Credits	Hours	CIA	ESA
USLEI101	Entrepreneurship-New venture Development	II	2	2	20	30
USLEI102	Managing creativity and learning organizations	III	2	2	20	30
USLEI103	Design Thinking	IV	2	2	20	30
USLEI104	Institutional and Legal framework for Startups and small	V	2	2	20	30
USLEI105	Rural Entrepreneurship.	VI	2	2	20	30



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



Pimpri Chinchwad Education Trust's

Pimpri Chinchwad University

Sathe, Pune - 412106



PCET's
**Pimpri
Chinchwad
University**

Learn | Grow | Achieve

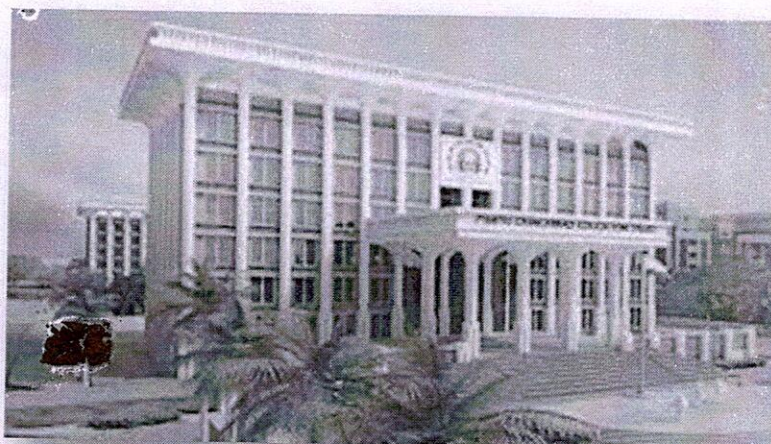
Curriculum Structure

B. Sc Nutrition and Dietetics

(2025-2029)

School of

Sciences



Effective from Academic 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.

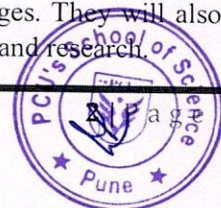
Vision and Mission of Program:

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.

We strive to provide an innovative and comprehensive curriculum that integrates theoretical knowledge with practical experience, research opportunities, and professional development. Our program emphasizes critical thinking, problem-solving, and communication skills, as well as cultural sensitivity and ethical considerations.

Through our program, students will develop a deep understanding of the role of nutrition and dietetics in promoting optimal health, preventing chronic diseases, and addressing global health challenges. They will also learn to apply this knowledge in various settings, including clinical, community, food service, and research.



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. Nutrition Knowledge - Graduates will have a comprehensive understanding of the scientific basis of human nutrition, including the roles of macro and micronutrients in health and disease, and the physiological processes involved in nutrient metabolism.
2. Nutrition Assessment - Graduates will be able to use appropriate tools and methods to assess an individual's nutritional status, analyze dietary intake data, and identify nutrition-related risk factors.
3. Nutrition Intervention - Graduates will have the skills and competencies necessary to design and implement appropriate nutrition interventions for individuals and populations, including meal planning, nutritional supplementation, and therapeutic diets.
4. Nutrition Education - Graduates will be able to develop and deliver nutrition education programs for individuals and communities, using evidence-based practices and culturally appropriate approaches.
5. Research - Graduates will be able to critically evaluate nutrition research, design and conduct research studies, and analyze and interpret data to contribute to the advancement of the field.
6. Professionalism - Graduates will adhere to the highest ethical and professional standards, including maintaining confidentiality, respecting cultural and individual differences, and advocating for the rights and needs of their clients.
7. Communication - Graduates will have effective communication skills, including the ability to communicate nutrition information to diverse audiences using a variety of media and platforms, and to work collaboratively with healthcare professionals, researchers, and community stakeholders.



INDEX

Sr. No.	Content	Pg. No.
1.	Curriculum Framework	1
2.	Tentative list of Electives. Open Electives, Life Skill Courses, Proficiency Foundation Courses, HSMC Courses	7
3.	Course Code Nomenclature	8





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

Sr. No.	Type of course	No. of Courses	Total Credits	
			No	%
1	Major	42	113	67.6
2	Minor	5	10	6.06
3	Open Electives	3	6	3.46
4	Ability Enhancement Courses(Audit Courses)	7	-	-
5	Skill Enhancement Courses	2	9	5.38
6	Vocational Skill Course	2	3	1.74
7	Summer Internship/On Job Training	2	18	10.40
8	Field Project	2	8	4.62
9	Indian Knowledge System(Audit Courses)	1	-	-
10	Value Education Course (Audit Courses)	3	-	-
	Total	69	167	100.0

CREDIT DISTRIBUTION: SEMESTER WISE

Sr. No.	Type of course	No. of Credits/Semester								Total
		1	2	3	4	5	6	7	8	
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	-	-	-	-	1	-		3	3
7	Summer Internship/On Job Training						6		12	18
8	Field Project			4				4		8
9	Indian Knowledge System (Audit Course)		2							-
12	Value Education Course	2	-	2	2	2	2			-
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	Applied Communication	1			1	-	50			50
Total			17		4	25	19	410	240	200	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 Exam

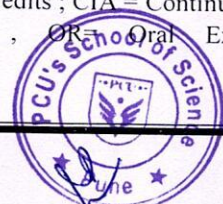
BSc (Nutrition and Dietetics) Curriculum Structure Semester II

		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, Negotiations and Conflict Mgt; ND	1	-		1	1	50			
UEG 102 / USLAE 113 / AEC	AEC	Spoken English	1	-	-	1	-	50			50
ACIKS101	IKS	IKS; Indian Health Systems	1	-	-	1	-	50			50
Total			19	1	3	21	20	435	240	75	600

Open Elective II

Course Code	Course Type	Subject name
UBSND 117	OE	Tools of Nutritional Assessment
UBSCP 115	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
 PCET'S Pimpri Chinchwad University/School of Sciences/ BSc.Nutrition and Dietetics



		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 206	SEC	Post Harvest Management of Foods-LAB			1	2	1	25		25	50
UBSND 207	SEC	Introduction to Biostatistics; ND	2	-	-	2	2	20	30		50
ACUHV2 01	VEC	UHV-II Understanding Harmony	1			1	-	50			50
UFLI 201	AEC	Foreign Language	2	-		2	-	50			50
UBSND 208	FP	Field Project-Nutrition and Dietetics		-		6	4	50		50	100
Total			17	0	2	27	20	390	210	100	750

BSc
(Nutrition and Dietetics)
Curriculum
Structure
Semester III



Course Code	Course Type	Subject name
-------------	-------------	--------------

UBSCP 205	OE	Gender Equality and Equity
UBSND 204	OE	Growth Monitoring and Health Policies

**Open
Elective III**

Course Code	Course Type	Subject name
UFLI 201A	AEC	German
UFLI 201 B	AEC	Japanese

**Foreign
Language**

**Abbrevia
tions:**

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

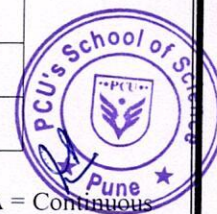


		Semester – IV	Teaching Scheme					Evaluation Scheme			
Course Code	Category	Course Name	Th	Tut	PR	Hrs.	Cr	CIA	ESA	PR/OR	Total
UBSND 209	MAJ M	Metabolic and Lifestyle Disorders	3	-	-	3	3	40	60		100
UBSND 2090	MAJ M	Metabolic and Lifestyle Disorders- Lab			1	2	1	25		25	50
UBSND 210	MAJ M	Nutrition in Life Stages- Adolescence till Geriatrics	3	-	-	3	3	40	60		100
UBSND 211	MAJ M	Food Microbiology	3	-		3	3	40	60		100
UBSND 213	MAJ M	Food Microbiology-LAB			1	2	1	25		25	50
UBSND 214	MAJ M	Maternal and Child Nutrition	2		-	2	2	20	30		50
UBSND 215	MAJ M	Personal and Fitness Training	2	-	-	2	2	20	30		50
UBSND 216	MAJ M	Personal and Fitness Training-LAB			1	2	1	25		25	50
UBSND 219	MAJ M	Food Diets, Types and Facts	2			2	2	20	30		50
	MIN	Diet & Immunity Minor III	2	-		2	2	20	30		50
UFL#202	AEC	Foreign Language	2	-		2	-	50			50
ACCOI201	IKS	Constitution of India	1	-		1	-	50			50
Total			20	0	3	26	20	375	300	75	750

BSc (Nutrition and Dietetics) Curriculum Structure Semester IV

Foreign Language

Course Code	Course Type	Subject name
UFL# 202A	AEC	German
UFL# 202 B	AEC	Japanese

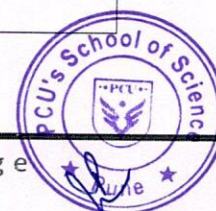


Abbreviations: Course Abbreviation; Th = Theory, Tut = Tutorial, Pr = Practical, Hrs = Hours, Cr = Credits; CIA = Continuous Internal Assessment, ESA = End Semester Assessment, PR = Practical Exam, OR= Oral Exam

		Semester – V	Teaching Scheme					Evaluation Scheme			
Course Code	Category	Course Name	Th	Tut	PR	Hrs.	Cr	CI A	ES A	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
	VSC	Aptitude and logical reasoning	2				-	50			50
UFLIII 301	AEC	Foreign Language	2	-		2	-	50			50
Total			19	01	3	26	23	370	330	50	750

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

**UBSND
308-
Elective I**



**Foreign
Language**

Course Code	Course Type	Subject name
UFLIII 301A	AEC	German
UFLIII 301 B	AEC	Japanese

Abbrevia

tions: 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



		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 Gen Health Statistics <i>Analysis in Nutrition</i>	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
UFLA 302	AEC	Foreign Language	2	-		2	-	50			50
UBSND 316	INTR	Summer Internship; Nutrition and Dietetics					6	100		100	200
Total			15	00	2	19	23	470	240	150	800

BSc (Nutrition and Dietetics) Curriculum Structure Semester VI
UBSND 308- 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

Course Code	Course Type	Subject name
-------------	-------------	--------------

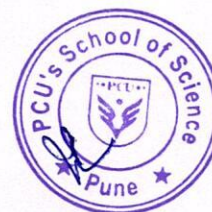

BSc (Nutrition and Dietetics)

UFL# 302 A	AEC	German
UFL# 302 B	AEC	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	MAJ M	Understanding Global Nutrition	3	-	-	3	3	40	60		100
UBSND 402	MAJ M	Understanding Global Nutrition-LAB			1	2	1	25		25	50
UBSND 403	MAJ M	Scientific Writing and Research Methods	2	1	-	3	3	40	60		100
UBSND 404	MAJ M	Food Laws and Regulations	3	-	-	3	3	40	60		100
UBSND 405	MAJ M	Diet and Sports	3	-	-	3	3	40	60		100
UBSND 406	MAJ M	Product Development and formulations	2	-	-	2	2	20	30		50
UBSND 407	MAJ M	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 Exam



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	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	-	-			12	200		200	200
Total			5	00			21	250		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

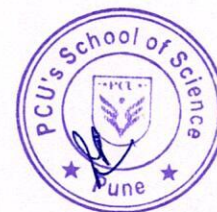


List of Minors

Course Code	Name of Course	Teaching Scheme			Evaluation Scheme	
		Sem	Credits	Hours	CIA	ESA
USPDH101	Health and hygiene	II	2	2	20	30
USPDH102	Know your drugs	III	2	2	20	30
USPDH103	Complementary and alternative medicine	IV	2	2	20	30
USPDH104	Drug Discovery	V	2	2	20	30
USPDH105	Forensic Science	IV	2	2	20	30

Course Code	Name of Course	Teaching Scheme			Evaluation Scheme	
		Sem	Credits	Hours	CIA	ESA
USCPSY101	Introductory Psychology	II	2	2	20	30
USCPSY102	Foundations of Social Psychology	III	2	2	20	30
USCPSY103	Theories of Personality Development	IV	2	2	20	30
USCPSY104	Industrial Psychology	V	2	2	20	30
USCPSY105	Mindfulness and Mental Health	VI	2	2	20	30

Course Code	Name of Course	Teaching Scheme			Evaluation Scheme	
		Sem	Credits	Hours	CIA	ESA
USLEI101	Entrepreneurship-New venture Development	II	2	2	20	30
USLEI102	Managing creativity and learning organizations	III	2	2	20	30
USLEI103	Design Thinking	IV	2	2	20	30
USLEI104	Institutional and Legal framework for Startups and small	V	2	2	20	30
USLEI105	Rural Entrepreneurship.	VI	2	2	20	30



SEMESTER - I

COURSE 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		NUTR101/MAJM	
Course Pattern		2023		Version		1.1	
Teaching Scheme					Assessment Scheme		
Theory	Practical	Tutorial	Total Credits	Hours	CIA (Continuous Internal Assessment)	ESA (End Semester Assessment)	Practical/Oral
1	-	1	2	2	30	70	-

Pre-Requisite: 10+2, Science

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.

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:**

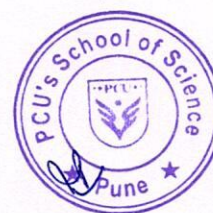
1. Essential of food & Nutrition –Vol. 1 M. Swaminathan, Bappco, Bangalore.
2. Human Nutrition and Dietetics –Davidson S. Passmore
3. Normal and Therapeutic Nutrition- Corinne. H. Robinson & Marilyn Lawler

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

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. CO1: To familiarize the students with the basics and fundamentals of Human nutrition
2. CO2: Define essential macronutrients (carbohydrates, proteins, fats) and micronutrients (vitamins, minerals).
3. CO3: Identify the primary sources of each macronutrient and micronutrient in the diet.
4. CO4: Explain the process of digestion and absorption of nutrients in the human body.
5. CO5: Describe the role of different enzymes and hormones in nutrient metabolism.

Course Learning Outcomes (CLO):

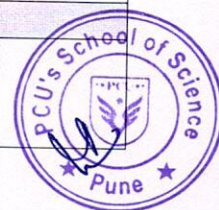
Students would be able to:

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		2023		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: 12 th 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 (CLO):	Learning	Outcomes	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)
Practical Plan



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	CLO1	2
2	Practical 2:	Week 2	Explain and draw the cycle of Water Input Output with sources in the body	CLO1	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	CLO1/2	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

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)

BSc. Nutrition & Dietetics



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. CO1: To familiarize the students with the basics and fundamentals of Human nutrition
2. CO2: Define essential macronutrients (carbohydrates, proteins, fats) and micronutrients (vitamins, minerals).
3. CO3: Identify the primary sources of each macronutrient and micronutrient in the diet.
4. CO4: Explain the process of digestion and absorption of nutrients in the human body.
5. CO5: 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. CLO1: 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. CLO2: Evaluate Dietary Patterns: Students would be able to critically evaluate dietary patterns and assess their impact on health and well-being.
3. CLO3: 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. CLO4: 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. CLO5: 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)



Practical Plan

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	CLO1	2
2	Practical 2:	Week 2	Explain and draw the cycle of Water Input Output with sources in the body	CLO1	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	CLO1/2	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

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)

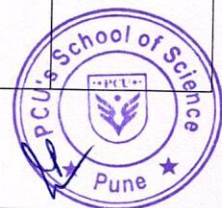


Name of the Program:		BSc Nutrition and Dietetics			Semester		1	
Course Name		Basics of Human Anatomy			Course Code		NUTR 102/ MAJM	
Course Pattern		2023			Version		1.0	
Teaching Scheme					Assessment Scheme			
Theory	Practical	Tutorial	Total Credits	Hrs	CIA (Continuous Internal Assessment)	ESA (End Semester Assessment)	Practical/Oral	
2			2	2	30	70	-	
Pre-Requisite: 12 th Science Pass								
Course Objectives (CO):			The objectives of Basics of Human Anatomy 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 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		
Endocrine system: 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		
Digestive system: Anatomy of GI Tract with special reference to anatomy and functions of stomach, (Acid production in the stomach, regulation of acid production through parasympathetic nervous system, pepsin role in protein digestion) small intestine and large intestine, anatomy and functions of salivary glands, pancreas and liver, movements of GIT, digestion and absorption of nutrients and disorders of GIT. Energetics: Formation and role of ATP, Creatinine Phosphate and BMR.	CLO 2	12



UNIT III		
Respiratory system, Urinary system: Respiratory system: Anatomy of respiratory system with special reference to anatomy of 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		
Reproductive system: 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 Co Food 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. Chatterjee, 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).



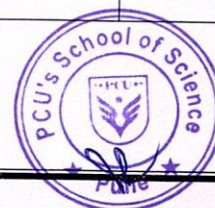
Course Curriculum

Course Name		Basics of Human Anatomy LAB		Course Code/	Course	UBSND103P/MAJM	
Course Pattern		2023		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: 12 th Science Pass							
Course Objectives (CO):			The objectives of Basics of Human Anatomy 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 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.				

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

Practical Plan

S.No	Practical	Week Number	Details	CLO	Hours
1	Practical 1:	Week 1	Practical 1 : Identification of various parts in human anatomy	CLO1	2
2	Practical 2:	Week 2	Practical 2: Understanding Complete Blood count report and correlating clinically	CLO1	2
3	Practical 3:	Week 3	Practical 3: Analysis and Report writing of case study	CLO 1	2
4	Practical 4:	Week 4	Practical 4: Enlisting various parts of Digestive system and diseases related to the Gastro Intestinal Tract	CLO 2	2



5	Practical 5:	Week 5	Practical 5: Define parts of Reproductive system and enlist two problems of Female reproductive system	CLO1/2	2
6	Practical 6:	Week 6	Practical 6: enlist two problems of Female reproductive system case study and report	CLO 2	4
7	Practical 7:	Week 7	Practical 7 : Make a flow chart of Pituitary Gland	CLO 2	2
8	Practical 8:	Week 8	Practical 8 : Study of Pituitary Gland and various hormones secretion	CLO 3 and 4	2
9	Practical 9:	Week 9	Practical 9 :Draw the structure of Heart	CLO 3 and 4	2
10	Practical 10:	Week 10	Practical 10: Study of Central Nervous System	CLO 4	2
11	Practical 11:	Week 11	Practical 11: Estimation of Hemoglobin By Sahali's Method	CLO 5	4
12	Practical 12:	Week 12	Practical 12: Blood pressure measurement	CLO 5	4
13	Practical 13:	Week 13	Practical 13: Blood sugar measurement	CLO5	4
			Total Hours		30

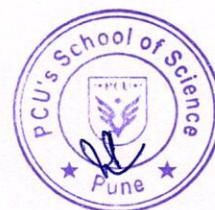
Learning resources

Textbooks:

1. Text book of Medical Physiology, Human Physiology An Integrated Approach by D.U. Silverthorn, Pearson. A.C. Guyton. W.B. Saunders Co Food 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. Chatterjee, 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).



Name of the program			BSc Nutrition and Dietetics		Semester 1		
Course Name			Introduction to Human Anatomy		Course Code		UBSND 103
Course pattern			2024		Version		I
Teaching scheme					Assessment scheme		
Theory	Practical	Tutorial	Total credits	Hours	CIA (Continuous Internal Assessment)	ESA (End semester assessment)	Practical/ Oral
04	00	00	04	04	40	60	--

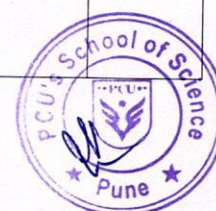
Pre Requisites: 12th standard Biology

Course Objectives (COs)	The objectives of the course: Introduction to Human Anatomy are: 1: Understand the Basic cell structure and function. 2: To familiarize the central idea behind the human digestive system, its organs and disorders 3: To learn about various parts of excretory system and its disorders 4: To understand the anatomy of respiratory systems and discuss their disorders 5: To familiarize with Musculoskeletal anatomy, its functional relationships and disorders
Course Outcomes (CLOs)	Students undertaking this course would be able to: 1: To introduce themselves to Human anatomy 2: To Understand digestive system with a nutritionist's standpoint 3: To evaluate the importance of excretory system 4: To understand the functions of respiratory system 5: To discuss osteology, arthrology and myology, its functional relationships and disorders.

Course Contents/Syllabus:

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

Descriptors/Topics	CLO	Hours
UNIT I		
Introduction to Human Anatomy and Cell Structure: Meaning and Definition of cell, tissues, organ, organ system, Classification of tissues, Cell division and its application in Human growth cycle	CLO 1	12



UNIT II		
Digestive system: Anatomy of GI Tract with special reference to anatomy and functions of stomach, small intestine and large intestine, Anatomy and functions of salivary glands, pancreas and liver, digestion and absorption of nutrients and disorders of GI Tract.	CLO 2	12
UNIT III		
Excretory System: Understanding the parts of Excretory system and its correlation with the digestive system, Urinary System: Structure of Nephron, Major blood vessels involved in kidney function, Properties of urine, various diseases related to the excretory system.	CLO 3	12
UNIT IV		
Respiratory system: Anatomy of respiratory system, mechanism of respiration, regulation of respiration, Respiratory disorders, artificial respiration, and resuscitation methods.	CLO 4	12
UNIT V		
Locomotor system: Musculoskeletal anatomy: osteology (bones and bone features), arthrology (joints and ligaments), myology (muscles), and their neurovascular components and structural characteristics, location, functional relationships and disorders	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 Co Food Science and You Mehas, K.Y. and Rodgers, S.L. Food Science and You, McMillan McGraw Company, New York, 2000.
2. Netter, F. H. (2019). Atlas of Human Anatomy, Professional Edition (7th ed.).

Reference Books:

1. Waugh, A., & Grant, A. (2010). Ross & Wilson Anatomy and Physiology in Health and Illness (11th ed.). Churchill Livingstone.
2. Sathya Narayana, Essentials of Biochemistry (2000)

Online resources:

1. <https://medictests.com/units/introduction-to-a-p>
2. <https://www.britannica.com/science/human-body>



Name of the Program:		BSc Nutrition and Dietetics			Semester		1	
Course Name		Community and Public Health Nutrition			Course Code		CHPN101/MAJM	
Course Pattern		2023			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	30	70	-	
Pre-Requisite: 12 th 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 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 Programs				
Course Curriculum								

Course Curriculum

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, IDD Iron deficiency, Anemia, Protein deficiency 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 Nutrition Bamji, M.S Rao, NP and Reddy V. 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:

1. Jelliffe 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.

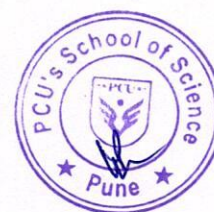
Online Resources:

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



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/Or al
3			3	3	40	60	-
Pre-Requisite: 12th Science Pass							
Course Objectives (CO):			The objectives of Community and Public Health Nutrition are:				

Course Curriculum

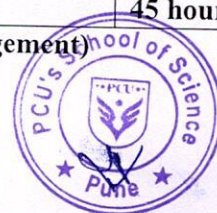


		1. To provide information regarding nutritional assessment. 2. To enable students to impart nutrition education among rural and needy people. 3. To acquaint them knowledge regarding food security and government and international program running in the field of community nutrition. 4. To learn different factors that affect food choices 5. To Demonstrate the importance of National Community Nutrition Programs
Course Outcomes (CLO):	Learning	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 Programs

Course Contents/Syllabus:

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), UNICEF, FAO	CLO 5	9
Total		45 hours

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



Textbooks:

1. Text book of Human Nutrition Bamji, M.S Rao, NP and Reddy V. 1996. Text book of Human Nutrition

Name of the Program:	BSc Nutrition and Dietetics	Semester 1	Level: UG
-----------------------------	------------------------------------	-------------------	------------------

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:

1. Jelliffe 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, Sanfarn 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		2023		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: 12 th 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 Tackle the Problem in Vulnerable Group	Week 3	Conduct survey to Identify Nutritional Problem	3	2
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

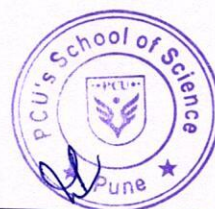
Learning resources

Textbooks:

1. Text book of Human Nutrition Bamji, M.S Rao, NP and Reddy V. 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:

- Jelliffe 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, Sanfarn Publishers, Madras, 1972.
- Mc.Laren S, Nutrition and the community, John Wiley & Sons, 1982.
- Reddy AA, Extension Education, Srilakshmi Press, Bapatla, 1971.



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: 12 th 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 Curriculum

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 Tackle the Problem in Vulnerable Group	Week 3	Conduct survey to Identify Nutritional Problem	3	2
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

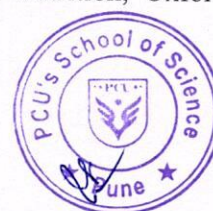
Learning resources

Textbooks:

1. Text book of Human Nutrition Bamji, M.S Rao, NP and Reddy V. 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:

- Jelliffe 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, Sanfarn Publishers, Madras, 1972.
- Mc.Laren S, Nutrition and the community, John Wiley & Sons, 1982.
- Reddy AA, Extension Education, Srilakshmi Press, Bapatla, 1971.



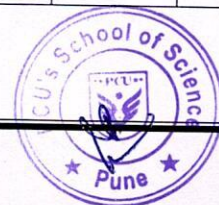
Course Curriculum

Name of the program		BSc ND		Semester : 1		Level: UG	
Course Name		Basic Principles of Food Science		Course Code/ Course Type		FSFP101/ MAJM	
Course Pattern		2023		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	1	30	70	-
Pre-Requisite: 12 th Science Pass							
Course Objectives (CO):				The objectives of Basics 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. 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	CLO 2	9



cooking. Dry heat Methods of Cooking: Air as medium of cooking: Grilling, Roasting, Baking. Fat as medium of cooking: Sautéing, Shallow fat frying, Deep fat frying. Combination of cooking methods: Braising. Modern Methods of 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, garden cress 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 and processing	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 nonalcoholic beverages, 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:

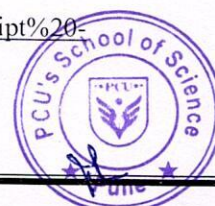
1. Srilakshmi, B. (2015). **Food Science**. 3rd Edition. New Delhi: New Age International.
2. Shakunthala Manay and Shadakhraswamy M., 2008. **Food Facts and Principles**, Third Edition, New Age International Publishers, New Delhi

Reference Book :

1. Mudambi .R. Sumathi and Rajagopal M.V (2008), **Food Science**. New Age 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://ugcmooocs.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>



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	-

Course Curriculum

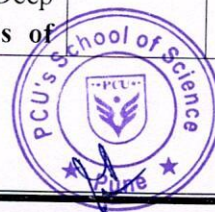


Pre-Requisite: 12 th Science Pass	
Course Objectives (CO):	The objectives of Essentials of Food Science are: 1. To gain knowledge of food in relation to health 2. Obtain knowledge of different food groups, their composition and role in diet and interpret the nutritive value of food groups. 3. To Learned 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, Roasting, Baking. Fat as medium of cooking: Sautéing, Shallow fat frying, Deep fat frying. Combination of cooking methods: Braising. Modern Methods of	CLO 2	9



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, garden cress 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 and processing	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

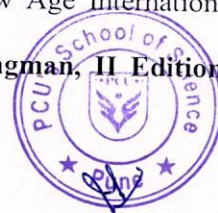
Learning resources:

Textbooks:

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

Reference Book :

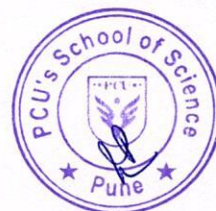
1. Mudambi .R. Sumathi and Rajagopal M.V (2008), **Food Science**. New Age International Publishers, New Delhi.
2. Thangam E. Philip (1998). **Modern Cookery Volume II**, Orient Longman, II Edition., Hyderabad



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



Course Curriculum

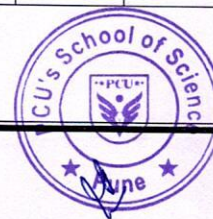
Name of the Program:		BSc ND		Semester : 1		Level: UG	
Course Name		Basic Principles of Food Science LAB		Course Code/ Course Type		UBSND107E/MAJM	
Course Pattern		2023		Version		1.0	
Teaching Scheme				Assessment Scheme			
Theory	Practical	Tutorial	Total Credits	Hours	CIA(Continuous Internal Assessment)	ESA (End Semester Assessment)	Practical/Oral
	1		1	2	25		25
Pre-Requisite:							
Course Objectives (CO):				The objectives of Basics of Food Science Lab 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. 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 items	Week 2	Weighing and measuring of food items- flours, cereals and cereal products, pulses and	CLO1	4



			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 Age International. Shakunthala Manay and Shadakhswamy 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**. New Age 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 Contents/Syllabus:

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

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.			

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 items	Week 2	Weighing and measuring of food items- flours, cereals and cereal products, pulses and dals, sugar, oils and other liquid foods.	CLO1	4

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 Age International. Shakunthala Manay and Shadakhraswamy M., 2008.
2. Food Facts and Principles, Third Edition, New Age International Publishers, New Delhi

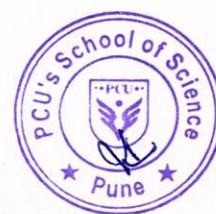
Reference Book :

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



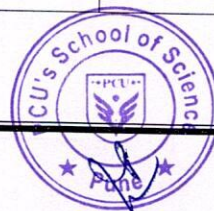
COURSE CURRICULUM

Course Contents/Syllabus:

Name of the Program:		BSc ND		Semester : 1		Level: UG	
Course Name		Food Chemistry		Course Code/ Course Type		FSFP102/MAJM	
Course Pattern		2023		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	30	70	
Pre-Requisite: 12 th Science							
Course Objectives (CO):					The objectives of food chemistry are: 1. To recall the knowledge of carbohydrates, Proteins and Lipids. 2. To recognize the knowledge of important sources carbohydrates, Proteins and Lipids in food. 3. To apply the knowledge regarding role of fibers in disease prevention 4. To analyze the difference between plant protein and animal protein 5. To evaluate knowledge regarding role of vitamins and minerals in disease prevention.		
Course Learning Outcomes (CLO):					Students would be able to: 1. To identify carbohydrates, Proteins and Lipids. 2. Explain the important sources carbohydrates, Proteins and Lipids in food. 3. Apply knowledge of regarding role of fibers in disease prevention 4. Analyze data difference between plant protein and animal protein 5. Evaluate the knowledge regarding role of vitamins and minerals in disease prevention.		

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

Descriptors/Topics	CLO	Hours
UNIT I		
Introduction: Food chemistry - Definition, Introduction, Importance and History of Food Chemistry Water –Types of water, hydrogen bonding in water, functions of water in food. Water activity– definition, measurement and control of water activity, estimation of moisture in foods. Colloidal system in foods – meaning, types, properties. Sols – meaning, types, properties: gels – meaning, type, properties Carbohydrates: Monosaccharides: Classification and properties - Glucose, Fructose, ribulose, ribose	CLO 1	3



Disaccharides: Maltose, Lactose, Sucrose Polysaccharides: Starch, Cellulose, Glycogen, Gums, Pectin Dietary fiber classification, functions and sources Dietary sources – Functional properties of dietary carbohydrates Browning reactions - Enzymatic browning and non-enzymatic browning		
UNIT II		
Protein: Classification and Structure of protein Functions of proteins in foods – physical and chemical properties of proteins its roles Amino acids - Classification, examples Plant protein, milk protein, egg protein	CLO	2
UNIT III		
Lipids: Definition and classification –biological role and uses of lipids, Fat group. Classification – Dietary sources. Physical and chemical aspects of lipids, rancidity and its types.	CLO3	3
Unit IV		
Vitamins and Minerals: Definition – Classification – Water Soluble and Fat Soluble – Occurrence - Biological Activities and Deficiency Diseases caused by Vitamin A, B, C, D, E and K - functions Minerals : Definition – Classification, functions	CLO4	3
Unit V		
Minerals : Definition – Classifications, Calcium, Phosphorus, Iron, Zinc, micro minerals and its functions	CLO5	3
Total Hours		15

Learning resources:

Textbooks:

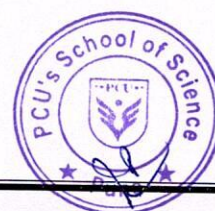
1. Srilakshmi, B. (2015). **Food Science**. 3rd Edition. New Delhi: New Age International.
2. Shakunthala Manay and Shadakharswamy M., 2008. **Food Facts and Principles**, Third Edition, New Age International Publishers, New Delhi.

Reference Book:

1. Mudambi .R. Sumathi and Rajagopal M.V (2008), Food Science. New Age 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>
3. <https://egyankosh.ac.in/bitstream/123456789/62122/3/Unit-12.pdf>
<https://www.slideshare.net/shivanandainapur/quality-and-processing-of-spices-ppt-copy-2-copypptx>



COURSE CURRICULUM

Course Contents/Syllabus:

Name of the Program:		BSc ND		Semester : 1		Level: UG	
Course Name		Food Chemistry Lab		Course Code/ Course Type		UBSND119 A	
Course Pattern		2023		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 practical on food chemistry are:

1. To recall the knowledge of carbohydrates, Proteins and Lipids.
2. To recognize the knowledge of important sources carbohydrates, Proteins and Lipids in food.
3. To apply the knowledge regarding role of fibers in disease prevention
4. To analyze the difference between plant protein and animal protein
5. To evaluate knowledge regarding role of vitamins and minerals in disease prevention.

Course Learning Outcomes (CLO):

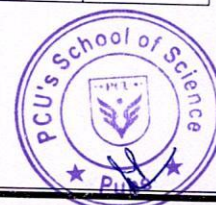
Students would be able to:

1. Identify carbohydrates, Proteins and Lipids.
2. Explain the important sources carbohydrates, Proteins and Lipids in food.
3. Apply knowledge of regarding role of fibers in disease prevention
4. Analyze data difference between plant protein and animal protein
5. Evaluate the knowledge regarding role of vitamins and minerals in disease prevention.

(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: Basic instruments used in food analysis and safety guidelines in laboratory	Week 1	Basic instruments used in food analysis and safety guidelines in laboratory	CLO1	2



2	Practical 2: Qualitative tests for Carbohydrates	Week 2	Qualitative tests for Carbohydrates food samples		2
3	Practical 3: Quantitative tests for Carbohydrates food samples	Week 3	Quantitative tests for Carbohydrates food samples	CLO 2	2
4	Practical 4: Qualitative tests for Protein in food samples	Week 4	Qualitative tests for Protein in food samples	CLO 2	2
5	Practical 5: Quantitative tests for Protein food samples	Week 5	Quantitative tests for Protein food samples	CLO 3	2
6	Practical 6: Estimation of Moisture Content In food samples	Week 6	Estimation of Moisture Content In food samples	CLO 3	2
7	Practical 7: Estimation of Ash Content In food samples	Week 7	Estimation of Ash Content In food samples	CLO 3	2
8	Practical 8: Practical on enzymatic browning in fruits and vegetables	Week 8	Practical on enzymatic browning in fruits and vegetables	CLO 3	2
9	Practical 9 : Estimation of gluten content of foods	Week 9	Estimation of gluten content of foods	CLO 4	2
10	Practical 10: Determination of pH and acidity of different fruit juices.	Week 10	Determination of pH and acidity of different fruit juices.	CLO 4	2

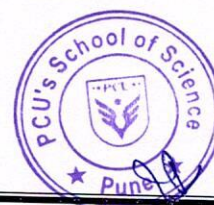
Learning resources

TEXT BOOKS:

1. Srilakshmi, B. (2003). **Food Science**, III Edition, New Delhi: New Age International.
2. Shakunthalamanay and Shadakhraswamy, 2008, **Food Facts and Principles**, Third Edition, New Age International Publishers, New Delhi.
3. Potter, N. N., & Hotchkiss, J. H. (2012). Food science. Springer Science & Business Media.

REFERENCE BOOKS:

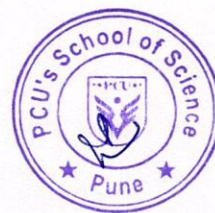
1. Mudambi .R. Sumathi and Rajagopal M.V (2008), "**Food Science**", New Age International Publishers, New Delhi.
2. Sunetra Roday (2000), **Food Science and Nutrition**, Edition I, Mangal Deep Publications, New Delhi.



3. Swaminathan, M. (1974). Essentials of food and nutrition. Vol. II. Applied aspects. Essentials of food and nutrition. Vol. II. Applied aspects

Online Resources/E-Learning Resources

1. <https://gpadampur.wordpress.com/wp-content/uploads/2015/08/3-2-fcn-practical.pdf>
2. https://www.igmpi.ac.in/post-graduate-diploma-in-food-science-and-technology.html?gad_source=1&gclid=CjwKCAjwoPOwBhAeEiwAJuXRh3f48y0qHMacrNyAj40wGEpplgvr eoOcyIjpJasrhqWxTu0CcrKsRBoCcYUQAvD_BwE



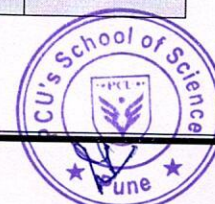
Course Curriculum

Name of the Program:		BSc Clinical Psychology		Semester : 1		Level: UG	
Course Name		Food Psychology		Course Code/ Course Type		NUTR103 /OE	
Course Pattern		2023		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:

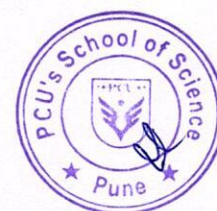
1. Lyman, B. (2012). *A Psychology of Food: More Than a Matter of Taste*. Springer Netherlands

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 Contents/Syllabus:

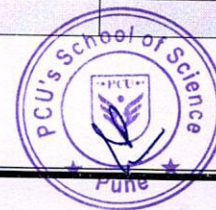
Name of the Program:		BSc Nutrition and Dietetics			Semester:1		LEVEL: UG	
Course Name		Understanding Fitness			Course Code		UBSND 108/OE	
Course Pattern		2024			Version		1.0	
Teaching Scheme					Assessment Scheme			
Theory	Practical	Tutorial	Total Credits	Hrs	CIA (Continuous Internal Assessment)	ESA (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: 1. To identify and importance of Understanding Fitness. 2. To recognize all the parts of musculoskeletal system involved in exercise physiology. 3. To develop skills in setting realistic and achievable fitness goals, creating action plans, and maintaining motivation and adherence to exercise routines. 4. 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. 5. Analyze and comprehend the role of various nutrients in performance and recovery.

(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		



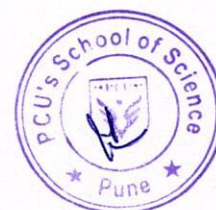
Basics of Exercise Regime - FITT formula – Frequency, Intensity, Time & Type of exercises for fitness. - Warm up exercises - Cool down exercises	CLO 3	6
UNIT IV		
Types of Exercises - Benefits of regular and adequate exercise - Types of exercises and health benefits with suitable examples. Aerobic exercises 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, 2013 Page 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, Sixth Edition, Mcgraw-Hill, Boston,2002
- Padmakshan Padmanabhan: Handbook of Health and Fitness, Indus source books, Mumbai, India, 2014

Online Resources

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



Course Curriculum

Name of the Program:		BSc Nutrition and Dietetics		Semester: 1		Level: UG	
Course Name		Basics of Computer Applications		Course Code/ Course Type		CSE104/ SEC	
Course Pattern		2024 ₃		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:

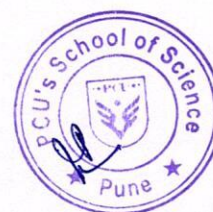
1. Wallace Wang. 2016. Absolute Beginners Guide to Computing (1st. ed.). Apress, USA

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=QauuL9glVYnbbFTb>



					Assessment		
	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:

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

Reference Books:

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

Online Resources/E-Learning Resources

- <https://youtu.be/iggvA8-Orlw?si=RnxZMuNJWzADSm57>
- <https://youtu.be/HB4I2CgkcCo?si=H7tVvO0puWaV7hOa>
- <https://youtu.be/16fZZXexZuE?si=QauuL9glVYnbbFTb>

Course Curriculum



Name of the Program:		BSc ND/ BSc. CP		Semester : 2		Level: UG	
Course Name		IKS: Indian Family System: The Concept, Practices and Current Relevance		Course Code/ Course Type		IFS101	
Course Pattern		2024		Version		1.1	
Teaching Scheme					Assessment Scheme		
Theory	Practical	Tutorial	Total Credits	Ho urs	CIA (Continuous Internal Assessment)	ESA (End Semester Assessment)	Practical/Or al
2	-	-	-	2	30	70	-

Pre-Requisite:

Course Objectives (CO):

The objectives of (IKS: Indian Family System: The Concept, Practices and Current Relevance) are:

1. To know the historical development of the Indian family system.
2. Familiarize diverse family structures prevalent in India, including joint families, nuclear families, and extended families, while exploring their characteristics, advantages, and challenges.
3. Explore the impact of cultural factors such as religion, traditions, rituals, and customs on the Indian family system.
4. Know effects of urbanization, globalization, education, and economic shifts on the Indian family system.
5. Identify the challenges faced by Indian families in the modern era.

Course Learning Outcomes (CLO):

(Guidelines to follow

For First year course, at least 2-4 levels of Bloom's;

2nd Year- 3-5;

3rd Year; 4-6

4th Year- 5-6)

For PG – start from 3-6 Level of Blooms)

Students would be able to:

CLO1: Understand the Indian family system and its core values.

CLO2: Examine the significance of family rituals, traditions, and celebrations in Indian culture.

CLO3: Evaluate the roles and responsibilities of individuals within different family structures.

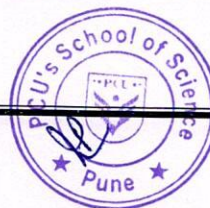
CLO4: Critically assess contemporary issues and predict future trends impacting Indian families.

CLO5: Evaluate the family's role in shaping social cohesion and preserving cultural heritage.

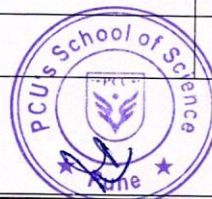
Course Contents/Syllabus:

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

Descriptors/Topics	CLO	Hours
UNIT I		



Introduction to the Indian Family System Understanding the importance of the family system. Family Structure, Functions, and Relationships, Core values and principles, Types of Families in India	CLO 1	3
UNIT II		
Practices within the Indian Family System Family Development Role of family members: parents, children, grandparents, and other relatives. Marriage and its significance in Indian families: Arranged marriages vs. love marriages. Gender roles and expectations within the family. Rituals, traditions, and ceremonies that reinforce family bonds. Inheritance patterns and property distribution.	CLO 2	3
UNIT III		
In-depth exploration of the joint family system: its origin, structure, and functioning. Generational Shifts and Evolving Roles- Focusing on changing roles, responsibilities, and expectations of family members. Interpersonal Relationships and Communication: The intricacies of communication patterns within the Indian joint family, including conflict resolution, decision-making processes, and the impact of effective communication on maintaining family cohesion. Gender Dynamics and Women's Empowerment: The role of gender within the Indian joint family system, discussing shifts in women's empowerment, changing perceptions of gender roles, and the challenges and opportunities for women in such families.	CLO3	3
UNIT IV		
Changing Family Patterns in Contemporary India The emergence of nuclear families: reasons and implications. Dual-career families and the evolving role of women. The concept of individualism and its effect on family dynamics. Technological advancements and their impact on family communication and interactions. Challenges faced by modern Indian families: mental health, work-life balance, generational gaps.	CLO4	3
UNIT V		
Current Relevance and Future Prospects Analyzing the relevance of the Indian family system in the context of societal changes. Comparing the Indian family system with family systems in other cultures. The role of education, media, and popular culture in shaping perceptions of family. Strategies for maintaining strong family bonds in the face of evolving societal norms. Exploring potential adaptations and innovations to preserve the positive aspects of the Indian family system	CLO5	3
Total Hours		30
Assessment 1 Case Study: (15 Marks Each)		



1. Develop role-play scenarios depicting typical family interactions in Indian households. Address issues like parent-child relationships, generational conflicts, or sibling dynamics.		
2. Investigate how modernization and globalization are impacting traditional Indian family systems. Discuss evolving roles of women, changing views on marriage, and intergenerational shifts.		
Assessment 2 Quiz (20 Marks)		

Learning resources

Text Reading:

- Patel, Tulsi. (Ed). (2005). The Family in India: Structure and Practice. New Delhi: Sage Publications.
- Uberoi, Patricia. (Ed). (1993). Family, Kinship and Marriage in India. Delhi: OUP.
- Kolenda, Pauline. (2011). Caste, Marriage and Inequality. New Delhi: Rawat Publications.

References:

- Goode, W.J. (1984). The Family. New Delhi: Prentice Hal

Online Resources/E-Learning Resources

https://cdn.visionias.in/value_added_material/9bac5-changing-dynamics-of-family-structure-in-india.pdf
(2024)



Name of the Program:		B.Sc ND		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: 12 th 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- Sense of Professional Ethics – Code of Ethics by NSPE-Making decisions with ethical dimensions–definition–roadmap to ethical decision making–common standards– internal obstacles – bias – empathy	CLO 1	8
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 unethical authority and domination-Global Business Ethics.	CLO 2	5
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	5
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	5
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	7
Total Hours		30

Learning resources

Textbooks:

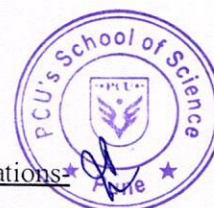
1. Subramanian. R. *Professional Ethics*, Oxford Publication, 2013.
2. Nagarasan. R. S. *Professional Ethics and Human Values*. New Age International Publications, 2006.

Reference Book:

1. Mike W Martin and Roland Schinzing, *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-](https://www.aicte-india.org/sites/default/files/Model_Curriculum/Minor%20Degree%20in%20Universal%20Human%20Values%20(UHV).pdf)

[india.org/sites/default/files/Model_Curriculum/Minor%20Degree%20in%20Universal%20Human%20Values%20\(UHV\).pdf](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>

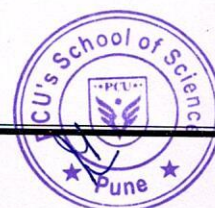


Course Curriculum

COURSE CURRICULUM

Name of the Program:		B.Sc.		Semester: I		Level: UG	
Course Name		Functional English		Course Code/ Course Type		FENG101	
Course Pattern		2023		Version		1.0	
Teaching Scheme					Assessment Scheme		
Theory	Practical	Tutorial	Total Credits	Hours	CIA (Continuous Internal Assessment)	ESA (End Semester Assessment)	Practical/Oral
2	0	0	0	2	30	70	-
Pre-Requisite:							
Course Objectives (CO):					The objectives of Functional English are: 1. To provide an overview of Prerequisites to Business Communication. 2. To put in use the basic mechanics of Grammar. 3. To provide an outline to effective Organizational Communication. 4. To underline the nuances of Business communication. 5. To impart the correct practices of the strategies of Effective Business writing		
Course Learning Outcomes (CLO):					Students would be able : 1. To understand Paraphrasing, deciphering instructions, interpreting guidelines, and discussion boards. 2. To write error-free while making optimum use of correct Technical Vocabulary and grammar. 3. To distinguish among various levels of organizational communication and communication barriers while developing an understanding of Communication as a process in an organization 4. To stimulate their Critical thinking by designing and developing clean and lucid writing skills 5. To comprehend the information properly		

Descriptors/Topics	CLO	Hours
UNIT I		
Remedial Grammar- Sentence & Tense, Voice, Narration	CLO 1	6
UNIT II		
Words and Phrases: Word formation. Synonyms and Antonyms; Homophones; Select vocabulary of about 500-1000 New words	CLO 2	6



UNIT III		
Fundamental of Communication- Technical Communication: Meaning, Origin, Types, 7 Cs of Communication. The distinction between General and Technical communication; Language as a tool of communication	CLO 3	6
UNIT IV		
Levels of communication: Interpersonal, Organizational, Mass communications; The flow of Communication: Downward, Upward, Lateral of Horizontal (Peer group):	CLO 4	6
UNIT V		
Barriers to Effective Communication- Physiological Barrier, Psychological Barrier, Socio-psychological Barrier Linguistic Barrier, Environmental Barrier, Ways to Overcome the Barriers	CLO 5	6
Total Hours		30

Learning resources

Text Books

- Gerald J. Alred, Walter E. Oliu, Charles T. Brusaw The Handbook of Technical Writing with 2020 APA Update, Publisher. Bedford/St. Martin's ; Publication date. June 15, 2020.
- Murphy, R. (2007) Essential English Grammar, CUP. ISBN: 8175960299.
- C. Muralikrishna and S. Mishra (2011) Communication Skills for Engineers, Pearson education. ISBN: 9788131733844.

Reference Books:

- "Kaul. Asha. Effective Business Communication. PHI Learning Pvt. Ltd. New Delhi.2011.
- Murphy, Essential English Grammar, CUP.
- J S Nesfield, English Grammar: Composition and Usage
- Muralikrishna and S. Mishra, Communication Skills for Engineers.

Online Resource

<https://functionalskillsresources.co.uk/english>

COURSE CURRICULUM

BSc. Nutrition & Dietetics





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	08
UNIT 2		
Syntax: Sentence, phrase, clause structures, coordination and subordination	CLO2	04
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

<https://www.britannica.com/topic/English-language/Characteristics-of-Modern-English>



COURSE CURRICULUM

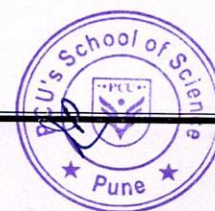
Name of the Program:		BSc CP		Semester : 1		Level: UG	
Course Name		Basics of Aasanas		Course Code/ Course Type		YOGA 101 /CC	
Course Pattern		2023		Version		1.0	
Teaching Scheme							
Assessment Scheme							
Theory	Practical	Tutorial	Total Credits	Hours	CIA (Continuous Internal Assessment)	ESA (End Semester Assessment)	Practical/ Oral
-	1	-	1	2	25	-	25
Pre-Requisite: XII Science / XII Arts – with Psychology as Major / Minor							
Course Objectives (CO):				The objective of Basics of Aasanas is: 1. To develop Physical Fitness 2. To improve mental wellness 3. To understand the concept of Mindfulness 4. To improve posture and alignment of the body 5. Creating Yoga as Daily Practice.			
Course Learning Outcomes (CLO):				Students would be able to : 1. Perform Strength ability exercises 2. Perform Flexibility enhancement exercises 3. Perform Relaxation and Cool down asanas 4. Perform Meditation and Pranayama. 5. Apply concepts in daily life			

Course Contents/Syllabus:

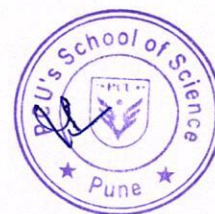
(All the Practical's carry equal weightage in Summative Assessment and equal engagement)

Practical Plan

Assignment/Practical/Activity Number	Assignment/Practical/Activity Title	Week Number/Turn	Details	CLO	Hours
1	Practical 1: Warm Up Preparations	Week 1/Turn 2	1.1 Meaning of Warm Up	CLO1	2
		Week 2	1.2 Various Types of Warm Up Exercises		2
		Week 3	1.3 Importance of Warm Up Exercises in Life		2
2.	Practical 2: Asanas (Yoga Poses)	Week 4	2.1 Various Types of Asanas	CLO 2	2
		Week 5	2.2 Learning the proper technique of various asanas		2
		Week 6	2.3 Performing Asanas		2
3.	Practical 3: Pranayama (Breath Control)	Week 7	3.1 Understanding various breath control exercises	CLO 3	2



		Week 8	3.2 Importance of Breathing Exercises in Life		2
		Week 9	3.3 Performing various pranayama		2
4.	Practical 4: Meditation and Mindfulness	Week 10	4.1 Performing Guided meditation	CLO 4	2
		Week 11	4.2 Understanding the Role of Meditation in Mental wellness		2
		Week 12	4.3 Performing relaxation Exercises		2
5554..	Practical 5: Yoga Props and Cool Down Exercises	Week 13	5.1 Performing asanas with various Yoga Props	CLO 5	2
		Week 14	5.2 Understanding their importance		2
		Week 15	5.3 Performing Cool down exercises		2
	Total				30



COURSE CURRICULUM

Name of the Program:		BSc CP		Semester : 1		Level: UG	
Course Name		Environmental and Sustainable Studies		Course Code/ Course Type		EVS101	
Course Pattern		2023		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	30	70	-
Pre-Requisite: XII Science / XII Arts – with Psychology as Major / Minor							
Course Objectives (CO):				The objectives of Environment & Sustainable Studies are: 1. To recall key concepts and terms in environmental studies, including its multidisciplinary nature, scope, and importance. 2. To recognize the structure, function, and energy flow of various ecosystems, including forest, grassland, desert, and aquatic systems. 3. To apply knowledge of natural resources to assess the impact of human activities like deforestation, mining, and water exploitation. 4. To analyze levels of biological diversity and understand biodiversity patterns and global hotspots. 5. To evaluate the types, causes, effects, and controls of environmental pollution and solid waste management.			
Course Learning Outcomes (CLO):				Students would be able to: 1. Understand key environmental concepts and their multidisciplinary scope and importance. 2. Identify the structure and energy flow of various ecosystems. 3. Assess the impact of human activities on natural resource 4. Comprehend levels of biodiversity and identify patterns and hotspots. 5. Understand pollution types, causes, effects, and control measures			

Course Contents/Syllabus:

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

Descriptors/Topics	CLO	Hours
--------------------	-----	-------

BSc. Nutrition & Dietetics



UNIT I		
Introduction to environmental studies: Introduction to environmental studies Multidisciplinary nature of environmental studies; Scope and importance	CLO 1	06
UNIT II		
Ecosystems : Ecosystems What is an ecosystem? Structure and function of ecosystem;Energy flow in an ecosystem: food chains, food webs and ecological succession. Case studies of the following ecosystems : a) Forest ecosystem b) Grassland ecosystem c) Desert ecosystem d) Aquatic ecosystems (ponds, streams, lakes, rivers, oceans, estuaries)	CLO 2	06
UNIT III		
Natural Resources : Renewable and Non-renewable Resources Land resources and land use change; Land degradation, soil erosion and desertification. Deforestation: Causes and impacts due to mining, dam building on environment, forests, biodiversity and tribal populations. Water : Use and over---exploitation of surface and ground water, floods, droughts, conflicts over water (international & inter---state)	CLO 3	06
UNIT IV		
Biodiversity and Conservation: Levels of biological diversity Biodiversity:genetic, species and ecosystem diversity; Biogeographic zones of India; Biodiversity patterns and global biodiversity hot spots. Ecosystem and biodiversity services: Ecological, economic, social, ethical, aesthetic and Informational value.	CLO 4	06
UNIT V		
Environmental Pollution : Environmental Pollution Environmental pollution : types, causes, effects and controls; Air, water, soil and noise pollution Solid waste management : Control measures of urban and industrial waste.	CLO 5	06
Total Hours		30

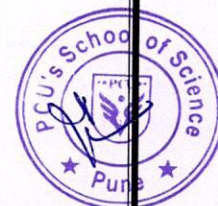
Learning resources

Textbooks:

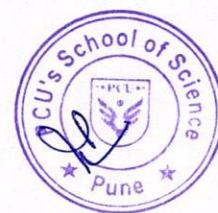
1. **Environmental Biology:** Agarwal, K. C. (2001). *Environmental Biology*. Nidhi Pub., Bikaner.
2. **Environmental Studies for Undergraduate Courses:** Basker, S., & Bhasker, R. (2007). *Environmental Studies for Undergraduate Courses*. Unicorn Books, New Delhi.
3. **Textbook of Environmental Science:** Bharucha, E. (2013). *Textbook of Environmental Science*. Orient Black Swan.

Reference Books:

1. **Population Environment and Health – Emerging Issues:** Bhatt, K. N. (2010). *Population Environment and Health – Emerging Issues*. Rawat, Jaipur.
2. **A Textbook on Environmental Studies (AECC):** Nandini, N. (2019). *A Textbook on*



- Environmental Studies (AECC)*. Sapna Book House, Bengaluru.
3. **Environmental Management:** Pandey, G. N. (1997). *Environmental Management*. Vikas Publishing House.



SEMESTER - II

COURSE STRUCTURE



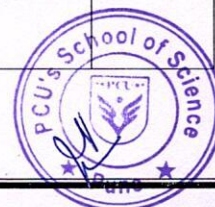
Course Curriculum

Name of the Program:		BSc ND		Semester : 2		Level: UG	
Course Name		Nutrition and Metabolism		Course Code/ Course Type		NUTR104/MAJM	
Course Pattern		2023		Version		1.0	
Teaching Scheme				Assessment Scheme			
Theory	Practical	Tutorial	Total Credits	Hous	CIA (Continuous Internal Assessment)	ESA (End Semester Assessment)	Practical/Oral
1		1	2	2	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 maintenance 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 metabolism of fats, deficiency disorders of lipids; essential fatty acids and eicosanoids. Inborn errors of lipid metabolism	CLO 2	9



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:

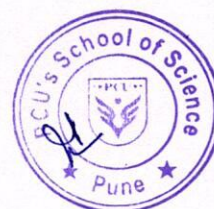
1. Srilakshmi, B. (2015). **Food Science**. 3rd Edition. New Delhi: New Age International. Shakunthala Manay and ShadakhraSwamy M., 2008.
2. Food Facts and Principles, Third Edition, New Age International Publishers, New Delhi Norman N Potter. (2007). Food Science, Fifth edition, An Aspen Publication, 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

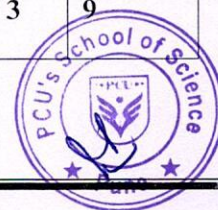


Name of the Program:		BSc ND		Semester : 2		Level: UG	
Course Name		Nutrition and Metabolism		Course Code/ Course Type		UBSND 110/MAJM	
Course Pattern		2024		Version		1.0	
Teaching Scheme					Assessment Scheme		
Theory	Practical	Tutorial	Total Credits	Hous	CIA (Continuous Internal Assessment)	ESA (End 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 maintenance 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 metabolism of fats, deficiency disorders of lipids; essential fatty acids and eicosanoids. Inborn errors of lipid metabolism	CLO 2	9
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 Delhi Norman 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=CjwKCAjwoPOwBhAcEiwAJuXRh3f48y0qHMacrNyAj40wGEppIgvreoOcyIjpJasrhqWxTu0CcrKsRBoCcYUQAvD_BwE

Course Curriculum



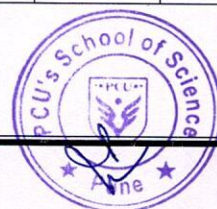
Course Curriculum

Name of the Program:		BSc ND		Semester : 2		Level: UG	
Course Name		Nutrition and Metabolism- lab		Course Code/ Course Type		UBSND 111/MAJM	
Course Pattern		2023		Version		1.0	
Teaching Scheme					Assessment Scheme		
Theory	Practical	Tutorial	Total Credits	Hous	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 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:

List of Activities:

Practical Number	Practical	Week Number	Details	CLO	Hou rs
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 of non working day	CLO 1	2
4	Practical 4:	Week 4	Calculation of fiber and carbohydrates by dietary record methods	CLO 2	2



5	Practical 5:	Week 5	survey on high fiber products.	CLO12	2
6	Practical 6:	Week 6	case study on lactose intolerance	CLO 2	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	CLO3	2
9	Practical 9:	Week 9	Biological methods of evaluation of protein quality-NPU	CLO4/5	2
10	Practical 10:	Week 10	Chemical methods of evaluating protein quality	CLO 4/5	4
11	Practical 11:	Week 11	Calculation of Protein quality of food groups	CLO	2
12	Practical 12:	Week 12	Calculation of Protein quality of protein rich dishes planning and evaluation	CLO 4	6
13	Practical 13:	Week 13	planning of suitable dish for supplementary feeding program		
14	Practical 14:	Week 14	Critical evaluation of protein quality methods		
15	Practical 15:	Week 15	Report writing and field visit		
			Total Hours		30

Learning resources

Text Reading:

1. Srilakshmi, B. (2015). **Food Science**. 3rd Edition. New Delhi: New Age International.
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).
5. 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
4. 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



Name of Program		BSc ND		Semester : 2		Level: UG	
Course Name		Nutrition and Metabolism – Lab		Course Code/ Course Type		UBSCND 111/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: 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 of non working day	CLO2	2
4.	Practical4:-	Week 4	Calculation of fiber and carbohydrates	CLO 2	2



			by dietary record methods		
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:

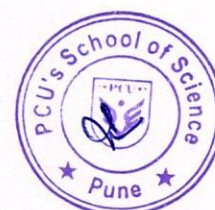
1. Srilakshmi, B. (2015). **Food Science**. 3rd Edition. New Delhi: New Age International. Shakhunthala Manay and Shadakhraswamy M., 2008.
2. **Food Facts and Principles**, Third Edition, New Age International Publishers, New Delhi
3. Norman N Potter. (2007). Food Science, Fifth edition, An Aspen Publication, 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

Course Curriculum

Name of the Program:		BSc Nutrition and Dietetics			Semester		2	
Course Name		Basics of Human Physiology			Course Code		NUTR105/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: 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		
Endocrine system: 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	6
UNIT II		
Digestive system: Anatomy of GI Tract with special reference to anatomy and functions of stomach, (Acid production in the stomach, regulation of acid production through parasympathetic nervous system, pepsin role in protein digestion) small intestine and large intestine, anatomy and functions of salivary glands, pancreas and liver, movements of GIT, digestion and absorption of nutrients and disorders of GIT. Energetics: Formation and role of ATP, Creatinine Phosphate and BMR.	CLO 2	7
UNIT III		
Respiratory system, Urinary system: Respiratory system: Anatomy of respiratory system with special reference to anatomy of 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	7
UNIT IV		
Reproductive system: 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	6
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	4
Total Hours		30

Learning resources

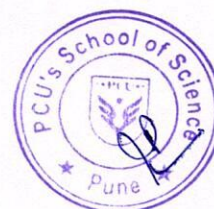
Textbooks:

1. Text book of Medical Physiology, Human Physiology An Integrated Approach by D.U. Silverthorn, Pearson. A.C. Guyton. W.B. Saunders Co Food 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. Chatterjee, 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 Contents/Syllabus:

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

Descriptors/Topics

UNIT I

Endocrine system: 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

6

UNIT II

Digestive system: Anatomy of GI Tract with special reference to anatomy and functions of stomach, (Acid production in the stomach, regulation of acid production through parasympathetic nervous system, pepsin role in protein digestion) small intestine and large intestine, anatomy and functions of salivary glands, pancreas and liver, movements of GIT, digestion and absorption of nutrients and disorders of GIT. **Energetics:** Formation and role of ATP, Creatinine Phosphate and BMR.

CLO 2

7

UNIT III

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

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	Hou rs	CIA (Continuous Internal Assessment)	ESA (End Semester Assessment)	Practical/Oral
3			3	3	40	60	
Pre-Requisite:		12 th 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)

BSc. Nutrition & Dietetics



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

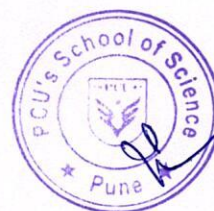
1. Allied Chemistry author by Dr. V. Veeraiyan
2. Biochemistry - author – U. Satyanarayan, U. chakrapani
3. Unified Chemistry by O.P. Agrawal
4. B.Sc. Chemistry Inorganic, Organic & Physical Chemistry by T.Krishna Murthy & B. Sambasiva Rao.
5. Text book of Physical Chemistry by Peter Atkins, Julio d. 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 113P/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 2	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	CLO3	2
6	Practical 6:	Week 6	Casein - Principle and Applications	CLO 3	2
7	Practical 7: Quantitative analysis of reducing sugars	Week 7	Quantitative analysis of reducing sugars 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	CLO5	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 5	4
11	Practical 11: Determination of pH and preparation of buffer solutions	Week 12	Preparation of Buffer solutions Measurement of pH	CLO 5	2
12	Practical 12:	Week 13,14,15	Preparation of percent solutions and calculations	CLO 5	6
			Total Hours		30

Learning Resources

Text Book:

1. Allied Chemistry author by Dr. V. Veeraiyan
2. 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 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 calculations	CLO 4	6
			Total Hours		30

Learning Resources

Text Book:

1. Allied Chemistry author by Dr. V. Veeraiyan
2. 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

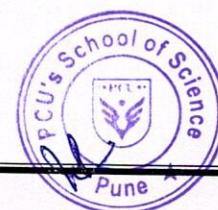
Course Curriculum

Name of the program		BSc ND		Semester : 2		Level: UG	
Course Name		Advance Principles of Food Science		Course Code/ Course Type		FSFP 103/ MAJM	
Course Pattern		2023		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	30	70	-
Pre-Requisite: 12 th Science Pass							
Course Objectives (CO):					The objectives of Advance Principles 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: Food Groups 1. Egg: Structure, grading, quality and Functional properties of eggs. 2. Meat - Structure, Composition, types, Nutritive value, Classes and Grades of meat cuts, Changes on cooking and Rigor mortis, Tenderization and Ageing of meat	CLO 1	9



3. Poultry - Composition, Nutritive value, Grades, Methods of cooking, Effects of cooking on poultry		
4. Fish and Marine foods: Classification and Composition, Selection and cooking, preservation and processing.		
UNIT II Beverages		
Classification and importance of beverages, food pigments, different types of beverages, carbonated alcoholic and non alcoholic beverages, browning reactions, Beverages and Nutritional Significance	CLO 2	9
Unit III Sugar and Confectionery		
Sugars : Chemistry, Functionality and their Role in Food Industry , The Functional Role of Sugars in Foods, Sweetener characteristics of sugars and stages of Sugars cookery, sugar crystals and Confections: Types of sugars and sugar syrups, Confectionery-Types, raw materials and their role, Indian confectionery.	CLO3	9
Unit IV : Fats and Oils, Spices and Herbs		
Fats • Fats and oils: Sources, Composition, Absorption, Functional properties of fat, Rancidity. Changes in fat during heating, Factors affecting fat absorption, Shortenings, Use of fat in tenderness of cooked products. Spices and herbs:	CLO4	9
Unit V		
Sensory Evaluation of Food • Sensory Attributes of food quality and its characteristics. • 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:

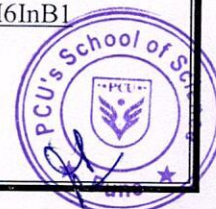
3. Srilakshmi, B. (2015). **Food Science**. 3rd Edition. New Delhi: New Age International.
4. Shakunthala Manay and Shadakhraswamy M., 2008. **Food Facts and Principles**, Third Edition, New Age International Publishers, New Delhi

Reference Book :

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

Online Resources/E-Learning Resources

4. <https://ugcmooocs.inflibnet.ac.in/assets/uploads/1/129/4459/et/W7-L3%20-%20Script%20-Structure,%20composition%20and%20nutritive%20value%20of%20Egg%20and%20Poultry200302070703032828.pdf>
5. https://www.researchgate.net/publication/227046039_Eggs/link/02bfe50ebfe4a54311000000/download?_tp=eyJjb250ZXh0Ijp7ImZpcnN0UGFnZSI6InB1YmxpY2F0aW9uIiwicGFnZSI6InB1YmxpY2F0aW9uIn



Course Curriculum

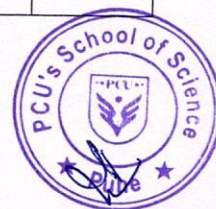
Name of the Program:		BSc ND		Semester : 2		Level: UG	
Course Name		Advance Principles of Food Science LAB		Course Code/ Course Type		UBSND 113 P/MAJM	
Course Pattern		2024		Version		1.0	
Teaching Scheme				Assessment Scheme			
Theory	Practical	Tutorial	Total Credits	Hours	CIA(Continuous Internal Assessment)	ESA (End Semester Assessment)	Practical/Oral
	1		1	2	25		25
Pre-Requisite:							
Course Objectives (CO):				The objectives of (Advance Principles 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

	Name of Practical's	Lecture
1	Experiment on Quality Evaluation of Eggs a) Grading of eggs b) Quality evaluation of egg- Floating test c) Candling of Egg	6



2.	Starch cookery- To study the gelatinization properties of different food starches a) Principle and applications b) Microscopic examinations of food starches and Structures , c) Gelatinization and factors affecting gelatinization	6
3.	To study the effect of various additives on the stability of egg white foam a) Study of the different stages in the foam formation, b) Explanation the effect of various factors in foam formation, and c) Application of the concept of foam development in preparation of various food.	6
4.	Experiment on fats and oils a) To determine the smoke point, b) To determine flash point and c) To determine fire point of given sample	6
5	Experiment on Sugar a) Principle and applications of inversion, melting and caramelization of sugar b) To study inversion of sugar c) To study melting point and caramelization of sugar	6
6	a) Sensory evaluation of food b) Market survey and c) report writing	6
	Total	30

Learning resources:

Textbooks:

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



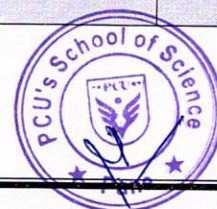
Course Curriculum

Name of the Program		BSc Nutrition and Dietetics		Semester		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

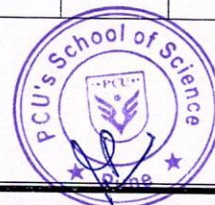
Name of the Program:		BSc ND		Semester : 2		Level: UG	
Course Name		Diet and disease Management - Lab		Course Code/ Course Type		DIET 101/MAJM	
Course Pattern		2024		Version		1.0	
Teaching Scheme				Assessment Scheme			
Theory	Practical	Tutorial	Total Credits	Hours	CIA(Continuous Internal Assessment)	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

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.

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>

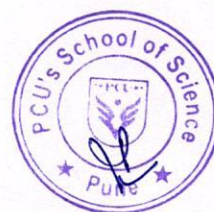


Course Curriculum

Name of the Program:		BSc Nutrition and Dietetics			Semester		2	
Course Name		Tools for Nutritional Assessment			Course Code		NUTR107	
Course Pattern		2023			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, Food frequency questionnaires, Dietary assessment in special populations	CLO 2	06
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 Edition Author : Staci Nix McIntosh

Reference Books:

1. Jelliffe 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->



Course Contents/Syllabus:

Name of the Program:		BSc Nutrition and Dietetics			Semester		2	
Course Name		Tools for Nutritional Assessment			Course Code		UBSND 117	
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.					

(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, Food frequency questionnaires, Dietary assessment in special populations	CLO 2	06
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 Edition Author : Staci Nix McIntosh

Reference Books:

1. Jelliffe 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>



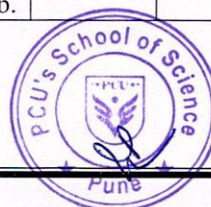
Course Curriculum

Name of the Program:		BSc Nutrition and Dietetics		Semester : 2		Level: UG	
Course Name		Sales, Negotiations and Conflict Management; ND		Course Code/ Course Type		MKT 101/SEC	
Course Pattern		2023		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: 12 th 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.	CLO 1	6



Qualification needed and Roles played by Sales executive and managers. Understanding selling skills.		
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-Lose and Lose-Lose). 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 Contents/Syllabus:

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

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: 12 th 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.			
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						CLO 2	6



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.		
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-Lose and Lose-Lose). 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

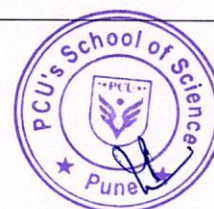
- Online Resources/E-Learning Resources :1. How to Influence the Consumer Behavior to Drive Sales by Jonah Berger, by Institution: WOBI (edX)
2. Successful Negotiation: Essential Strategies and Skills, University of Michigan (edX)

Course Curriculum



COURSE CURRICULUM

Name of the Program:		BSc ND		Semester : 2		Level: UG	
Course Name		Ancient Indian Wisdom: Spiritual Heritage		Course Code/ Course Type		IKS 102	
Course Pattern		2023		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	1	20	30	-
Pre-Requisite: XII Science / XII Arts – with Psychology as Major / Minor							
Course Objectives (CO):				The objectives of Ancient Indian Wisdom: Spiritual Heritage are: 6. To help students understand and explain key concepts in Hinduism 7. To facilitate students with an overview of Jain and Buddhist philosophy, principles, and practices. 8. To lead students to Engage in practical exercises to experience concentration practices, emphasizing their role in spiritual development. 9. Integrate spiritual principles into creative expressions and daily life. 10. To foster a deeper connection between artistic endeavors and inner spiritual growth.			
Course Learning Outcomes (CLO):				Students would be able to: 6. Recall and articulate the fundamental concepts of Hinduism, Buddhism, and Jainism, showcasing a solid understanding of the foundational principles. 7. Interpret the philosophies of Buddhism, demonstrating a nuanced comprehension of their core tenets, values, and practical applications in daily life. 8. Interpret the philosophies of Jainism demonstrating a nuanced comprehension of their core tenets, values, and practical applications in daily life. 9. Apply meditation techniques and concentration practices from diverse traditions, showcasing the ability to incorporate these practices into personal spiritual journeys. 10. Synthesize knowledge of spiritual philosophies with artistic and daily life practices.			



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

Descriptors/Topics	CLO	Hours
UNIT I		
Introduction to Ancient Indian wisdom: Hinduism – Concepts, 5 Tatvas, Brahman, Atman, Kundalini, Chakras and energy flow in body, 5 Koshas	CLO 1	03
UNIT II		
Buddhism: Siddhartha Gautama and the foundation of Buddhism, Four Noble Truths and the Eightfold Path	CLO 2	03
UNIT III		
Jainism: Overview of Jain philosophy, principles, and practices, Ahimsa (non-violence) and the path to liberation.	CLO 3	03
UNIT IV		
Meditation Traditions: Meditation techniques in various spiritual traditions, Concentration practices.	CLO 4	03
UNIT V		
Influence on Arts and Culture: Impact of spiritual philosophies on art, music, and dance, Integration of spirituality into daily life.	CLO 5	03
Total Hours		15

Learning resources**Textbooks:**

1. Environmentally friendly behavior. Environment & Behavior, 41(5), 693-714., Dolnicar, S. & Grun, B. (2009).

Reference Books:

1. Environmental Psychology: principles and practice by Gifford, R. (2007)

Online Resources/E-Learning Resources:

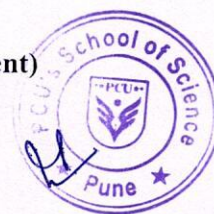
1. https://youtu.be/czN0fzK1LVI?si=O7kQh8Ora0_qMQqo
2. https://buddho.org/buddhism-history-and-schools/?gad_source=1&gclid=CjwKCAiAt5euBhB9EiwAdkXWO3AmP0abO-44TDLIW6MUAwsIKPhWRq8oFp5PVbsjAY7UHUvH3TcMTRoCOqIQAvD_BwE
3. https://jainworld.com/philosophy/fundamentals/?campaignid=12663918374&adgroupid=124169008253&creative=596079702165&matchtype=b&network=g&device=c&keyword=belief&source=1&gclid=CjwKCAiAt5euBhB9EiwAdkXWO-HDp6Jy2UnmOIEPA-VZ9bGT8AfOdhnY2eLQ6MOdzAxfLezypLgjiReCH-0QAvD_BwE
4. https://youtu.be/Ed_atBhhYD8?si=S-7Db2o3JwnwKPNt



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.

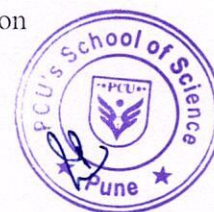
Reference Books:

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_jpFXWtWmkLIYx9
2. Ways to Listen Better – Julian Treasure
https://youtu.be/cSohjIYQI2A?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



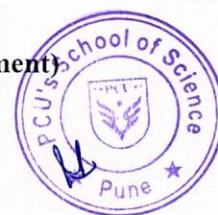
Name of the Program:		B. Sc. Nutrition and Dietetics		Semester : 2		Level: UG	
Course Name		SPOKEN ENGLISH		Course Code/ Course Type		USLAE113/AEC	
Course Pattern		2024		Version		1.0	
Teaching Scheme					Assessment Scheme		
Theory	Practical	Tutorial	Total Credits	Hours	CIA (Continuous Internal Assessment)	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. 34th reprint. 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

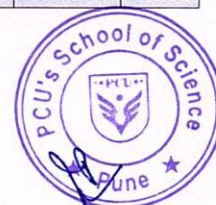


Name of the Program:		B. Sc.		Semester : 1		Level: UG	
Course Name		IKS: Indian Health Science		Course Code/ Course Type		ACIKSSP101	
Course Pattern		2024		Version		1.0	
Teaching Scheme				Assessment Scheme			
Theory	Practical	Tutorial	Total Credits	Hours	CIA (Continuous Internal Assessment)	ESA (End 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, Panchamahabhuta 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 <i>Astāngahrdaya</i> (selections from <i>Sūtrasthāna</i>) and <i>Suśruta-Samhitā</i> (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	Course Code/ Course	USCPSY101/

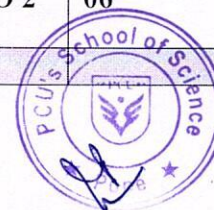


		Psychology		Type		MINOR	
Course Pattern		2024		Version		1.0	
Teaching Scheme					Assessment Scheme		
Theory	Practical	Tutorial	Total Credits	Hours	CIA (Continuous Internal Assessment)	ESA (End Semester Assessment)	Practical/ Oral
2	-	-	2	2	20	30	-
Pre-Requisite: XII Science / XII Arts – with Psychology 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 contexts and 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 feelings and 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



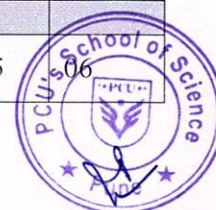
Name of the Program:	B. Pharm	Semester : # III / *V	Level: UG
Course Name	Know Your Drugs	Course Code/ Course Type	USPDH102 /Minor
Course Pattern	2024	Version	1.0

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 nature and source of drugs, essential drugs concepts.	CLO1	06
UNIT II		
Route of drug administration Routes of drug 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 based on age, body weight and body surface area.	CLO3	06
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	CLO5	06



drug. Basic knowledge of Toxicity OTC Medication- Definition, OTC medication list & Counselling		
--	--	--

Name of the Program:	MBA (General, International)	Semester: #II/*IV	Level: UG
-----------------------------	-------------------------------------	--------------------------	------------------

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, Churchill 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\(B.Pharmacy%203%20Year%20Pharmacology%20III%20T4\)%20By%20Dr.%20Bhagat%20Singh%20Jaiswal.pdf](https://jiwaji.edu/pdf/ecourse/pharmaceutical/General%20Pharmacology%20(B.Pharmacy%203%20Year%20Pharmacology%20III%20T4)%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



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: 6. To recall the concept of entrepreneurship 7. To recognize methods of idea generation and explore opportunities 8. To apply success & failure stories of ventures to one’s self enterprise 9. To analyze new venture concepts in terms of complexity of new venture initiation 10. 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	CLO 1	6

of an Entrepreneurs, Steps of entrepreneurial process		
UNIT II		
Products & Opportunities: Opportunity / Identification and Product Selection, Product Selection, Conducting Feasibility Studies, Entry strategies, Intellectual Property	CLO 2	6
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:



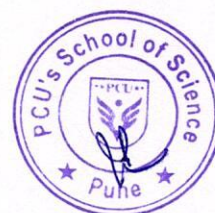
- 1) Sharma, Apoorv and Shukla, Balvinder and Joshi, Manoj, Can Business Incubators Impact the Start-Up Success? India Perspective! (October 20, 2014). Available at SSRN: <https://ssrn.com/abstract=2511944> or <http://dx.doi.org/10.2139/ssrn.2511944>

Name of the Program:	BSc Nutrition and Dietetics	Semester: 5	Level: UG
-----------------------------	------------------------------------	--------------------	------------------

- 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>



SEMESTER - III

COURSE STRUCTURE



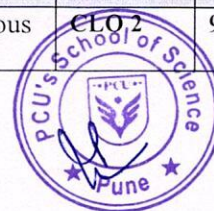
COURSE CURRICULUM

Name of the Program:		BSc ND		Semester : 3		Level: UG/PG	
Course Name		Essentials of Meal Planning		Course Code/ Course Type		UBSND 201 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	40	60	100
Pre-Requisite:							
Course Objectives (CO):				The objectives of (Essentials of Meal Planning) are: 11. To recall and examine meal and menu plans for a variety of personal and professional businesses. 12. To recognize and Identify and evaluate various health coaching to improve client’s long-term eating habits 13. To Compare and contrast a variety of nutrition principals, menu plans, preparation techniques, and specialized dietary plans 14. To analyze and demonstrate the understanding of food costing and menu pricing 15. 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 menu 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, menu 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 meal and menu plans based on seasonality of ingredients.			

Course Contents/Syllabus:

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

Descriptors/Topics	CLO	Hours
UNIT I		
Definition meaning & importance of meal planning: Factors That Define a Meal, Economic factors, Trends in meal planning, Individual skill level, Individual dietary needs, Cost effective logistics, Equipment, Product availability, Seasonality, Use of basic food groups in meal planning, Basic meal patterns & number of serving according to meal timing, breakfast, lunch, snacks, dinner.	CLO 1	9
UNIT II		
Advantages of meal planning: Point to be considered while meal planning , Various factors affecting meal planning, nutritional requirement factors like, sociocultural,	CLO 2	9



religious & resources, physical & mental activities special nutritional conditions/problems.		
UNIT III		
Meal Planning for different age groups (Requirements, nutritional problems food selection according to different activities & socio economic levels. (1) infant feeding (Birth to one year) (a) Breast Feeding (b) Bottle feeding (c) Weaning food (supplementary feeding) (d) Nutrition for infant (one year old children	CLO 3	9
UNIT IV		
Menu Planning: Meal planning for children (a) Preschoolers (2 to 5 years) (b) School Children (6 to 12 years) (c) School Lunch & packed lunch for children	CLO3/4	9
UNIT V		
Meal planning : Meal planning for adolescent boy , Meal planning for adolescent girl ,Meal planning for adult men (Heavy, moderate & sedentary work), Meal planning for adult women (Heavy, moderate & sedentary work)	CLO 3/4	9
Total		45

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. 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:

1. Textbook of Human Nutrition 4 Edition, by Bamji M S (Author)
2. Fundamentals Of Foods, Nutrition And Diet Therapy 6Th Edition 2012 by Mudambi, SumatiR,Rajagopal, MV, New Age International (P) Ltd Publishers

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/>



COURSE CURRICULUM

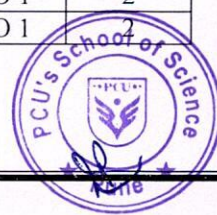
Name of the Program:		BSc ND		Semester : 3		Level: UG	
Course Name		Essentials of Meal Planning Lab		Course Code/ Course Type		UBSND 202/MAJM	
Course Pattern		2023		Version		1.0	
Teaching Scheme							
				Assessment Scheme			
Theory	Practical	Tutorial	Total Credits	Hours	CIA (Continuous Internal Assessment)	ESA (End Semester Assessment)	Practical/Ora l
	1		1	2	25		25
Pre-Requisite:							
Course Objectives (CO):				The objectives of Essentials of Meal Planning are: 1. To recall and examine meal and menu 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 menu 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 menu 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, menu 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 meal and menu plans based on seasonality of ingredients.			

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	Standardization of recepies	CLO1	2
2	Practical 2:	Week 2	Meal planning for 0 to 5 year child	CLO 1	2
3	Practical 3:	Week 3	Meal planning for Preschool child	CLO 1	2



4	Practical 4:	Week 4	Meal planning for School going	CLO 2	2
5	Practical 5:	Week 5	Meal planning for Adolescent girl	CLO2	2
6	Practical 6:	Week 6	Meal planning for school packed lunch	CLO 2	2
7	Practical 7:	Week 7	Planning and preparation of a weaning mixture	CLO 3	2
8	Practical 8:	Week 8	Meal planning for Pregnant woman-Moderate worker	CLO 3	2
9	Practical 9:	Week 9	Meal planning for Lactating mother-Sedentary worker.	CLO 4	2
10	Practical 10:	Week 10	Pregnant woman- Moderate worker	CLO 4	2
11	Practical 11:	Week 11	Elderly woman (geriatrics)	CLO 5	2
12	Practical 12:	Week 12, 13	Visit to Community and report writing	CLO 5	4
12	Practical 12:	Week 14, 15	Visit to Aanganwadi and report writing	CLO 5	4
Total Hours					30

Learning resources

Textbooks:

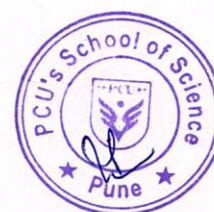
1. Textbook of Food & Nutrition, Amrita Kachhawa, Vardhan Publishers & Distributors. 4. Handbook of Food and Nutrition by Dr.Swaminathan (by The Bangalore press)
2. Textbook of human nutrition, S Das, Academic publishers.
3. Textbook of Human Nutrition 4 Edition, by Bamji M S (Author)
4. Textbook of Nutrition and Dietetics (Sharda Gupta, Santosh Jain Passi, Rama Seth, RanjanaMahna, Seema Puri, Kumud Khanna)Elite Publishing House Pvt. Ltd.

Reference Book:

1. Fundamentals Of Foods, Nutrition And Diet Therapy 6Th Edition 2012 by Mudambi, Sumati R,Rajagopal, MV, New Age International (P) Ltd Publishers.
2. Handbook of Food and Nutrition by Dr.Swaminathan (by The Bangalore press)

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>



COURSE CURRICULUM

Name of the Program:		BSc ND		Semester : 3		Level: UG	
Course Name		Nutrition in Life Stages-Conception till Childhood		Course Code/ Course Type		UBSND 203 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:							
Course Objectives (CO):				The objectives of (Nutrition in Life Stages-Conception till Childhood) are: 1: To Recall the nutritional needs specific to each life stage. 2: To Explain the role of nutrition in the development and maintenance of health through different life stages. 3: To Apply knowledge of dietary guidelines to create age appropriate meal plans for individuals at different life stages. 4: To Analyze dietary patterns to identify potential nutritional deficiencies or special requirements across different life stages. 5: To Design, formulate and develop the product targeting a specific life stage, incorporating principles of healthy eating, cultural sensitivity, and accessibility.			
Course Learning Outcomes (CLO):				Students would be able to: 1: Understand the nutritional requirements for infants and young children, including breastfeeding guidelines, introduction of solid foods, and prevention of common nutritional deficiencies. 2: Develop strategies for maintaining optimal nutrition and healthy lifestyle habits throughout adulthood, including meal planning, portion control, and managing dietary restrictions. 3: Design dietary plans that meet the unique nutritional requirements of pregnant and lactating women, considering factors such as increased energy needs, micronutrient supplementation, and food safety. 4: Develop personalized dietary interventions to support healthy aging, including strategies to maintain muscle mass, bone health, cognitive function, and overall quality of life. 5: Develop Nutrition Education Program effectively for the various Age groups.			

Course Contents/Syllabus:

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

BSc. Nutrition & Dietetics



Descriptors/Topics	CLO	Hours
UNIT I		
Introduction to Adulthood: Definition of Adulthood, Reference Indian Men and Women, Types of Physical Activity-Sedentary, Moderate, Heavy. RDAs in Adulthood and Planning Diet	CLO 1	9
UNIT II		
Pregnancy: Definition of Pregnancy, Physiology of Pregnancy, Developmental Stages in Pregnancy, Nutrition requirements in Pregnancy, Nutritional deficiencies in Pregnancy Complications in Pregnancy	CLO 2	9
UNIT III		
Lactation: Definition and Meaning of Lactation, Physiology of Lactation, Composition of Breast milk, Advantages of Breast Feeding, Nutritional Requirements during Lactation, Nutritional Disorders and Deficiencies in Lactation	CLO 3	9
UNIT IV		
Infancy: Introduction to Infancy, Developmental Changes in Infancy, Weaning, Nutritional needs in Infancy, Nutritional Disorders in Infancy	CLO4	9
UNIT V		
Childhood: Introduction to Childhood, Physiological Changes in Childhood, Nutritional Needs in Childhood- Early and Late Childhood	CLO 5	9
Total		45

Learning resources

Text Books:

1. NUTRITION: A LIFECYCLE APPROACH: Ravinder Chadha and Pulkit, ISBN 812505930X
2. Essentials Of Life Cycle Nutrition by Judith Sharlin Sari Edelstein, Jones & Bartlett, Author: Judith Sharlin Sari Edelstein, Publisher: Jones & Bartlett e-ISBN: 978-1-68108-108-3, 2016.
3. Handbook of Food and Nutrition by Dr.Swaminathan (by The Bangalore press)

Reference Book:

1. Textbook of Human Nutrition 4 Edition, by Bamji M S (Author)
2. Fundamentals Of Foods, Nutrition And Diet Therapy 6Th Edition 2012 by Mudambi, SumatiR,Rajagopal, MV, New Age International (P) Ltd Publishers

Online Resources/E-Learning Resources

<https://2012books.lardbucket.org/pdfs/an-introduction-to-nutrition/s17-nutrition-through-the-life-cyc.pdf>

<https://www.yumpu.com/en/document/view/65500126/nutrition-through-the-life-cycle-4th-edition-4th-ed>



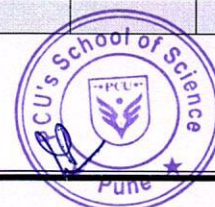
COURSE CURRICULUM

Name of the Program:		BSc ND		Semester : 2		Level: UG	
Course Name		Growth Monitoring and Health Policies		Course Code/ Course Type		UBSND 204/OE	
Course Pattern		2024		Version		1.0	
Teaching Scheme					Assessment Scheme		
Theory	Practical	Tutorial	Total Credits	Hou rs	CIA (Continuous Internal Assessment)	ESA (End Semester Assessment)	Practical/Oral
2	-	-	2	2	40	60	-
Pre-Requisite:							
Course Objectives (CO):				The objectives of Growth Monitoring and Health Policies: 1. The students should have the knowledge regarding epidemiology, prevention, control & management of diseases of public health importance. 2. Knowledge of all relevant public health laws and institutions of public health importance. 3. The candidate should be able to discharge his/ her duties effectively in an administrative capacity in a health organization such as Municipal Corporation 4. To be able to plan, implement & evaluate school health services 5. To be able to plan, implement & evaluate programs related to Occupational Health			
Course Learning Outcomes (CLO):				Students would be able to: 1. Should acquire administrative skills essential for smooth functioning of health establishments 2. Should the able to conduct epidemiological investigation of various diseases during epidemic. 3. Should know the criteria for sanitation of various place viz slaughter house, eateries, sewage treatment plants, ports & airport, milk dairies and be in position to inspect & recommend corrections. 4. Should be able to plan, implement & evaluate school health services 5. Should be able to plan, implement & evaluate programs related to Occupational Health.			

Course Contents/Syllabus:

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

Descriptors/Topics	CLO	Hou rs
UNIT I		



Prevention of diseases in the community, health situation- past & present, History of public health, Place & role of preventive medicine in development of social medicine, community health, community medicine.	CLO 1	6
UNIT II		
Health, Changing concepts ,Definition, Dimensions, Concepts of wellbeing , PQLI, HDI, Spectrum of Health, Determinants of Health, Rights & responsibilities, Indicators of health, Mortality, Morbidity, Disability, Others Health care system Characteristics, Levels, Primary Health Care	CLO 2	6
UNIT III		
Disease, Concept, Natural history of some common diseases	CLO3	6
UNIT IV		
Nutritional problems, LBW, PEM, Xerophthamia, Nutritional anaemia, IDD, Endemic flurosis	CLO4	6
UNIT V		
National Nutrition Policy & Programs, Applied aspects of nutrition (dietetics), Reproductive & Child Health (RCH)	CLO5	6
Total Hours		30

Learning resources

Text Reading:

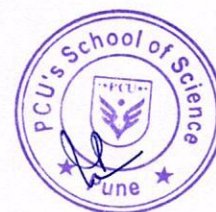
1. Judith E. Brown, 2016, Nutrition Through the lifecycle (6th Edition). Wadsworth Publishing house
2. Judith Sharlin and Sari Edelstein, 2010. Essentials of Life Cycle Nutrition. Jones and Bartlett Learning.

References:

1. Public Health at the Crossroads – Achievements and Prospects. Robert Beaglehole and Ruth Bonita 2nd Edition Cambridge University Press
2. Maxcy-Rosenau-Last Public Health & Preventive Medicine, Fourteenth Edition Ed Robert Wallace, MD, et al.
3. Epidemiology and Management for Health Care: Sathe, et al. Popular Prakashan, Mumbai,
4. International Public Health: Diseases, Programs, Systems, and Policies by Michael Merson, Robert E Black, Anne J Mills - Jones and Bartlett Publishers. 7) Preventive and Social Medicine, K Park, BansaridasBhanot Publishing House

Online Resources/E-Learning Resources

<https://vikaspedia.in/health/child-health/growth-and-development/monitoring-growth-and-development>

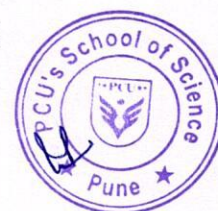


COURSE CURRICULUM

Name of the Program:		BSc/BBA/B.Pharm/ B.Tech		Semester : III/V		Level: UG	
Course Name		Minor 2: Lifestyle Management		Course Code/ Course Type		USCNUTR102	
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:		Nil					
Course Objectives (CO):					The objectives of Health & Hygiene are: 1. To understand basic concepts related to lifestyle management-Health, Nutrition, Diet and Diseases. 2. To interpret the effect of healthy lifestyle choices on individual's wellbeing. 3. To implement strategies for healthy eating and exercise into daily routines. 4. To Evaluate the effectiveness of different lifestyle interventions in improving health outcomes. 5. To construct educational materials or programs aimed at promoting healthy lifestyles.		
Course Learning Outcomes (CLO):					Students would be able to: 1. Demonstrate an understanding of the key principles of healthy living, including nutrition, physical activity, stress management, and sleep. 2. Utilize various assessment tools to evaluate individual lifestyles, identify areas for improvement, and set personalized goals for behavior change 3. Promote healthy eating habits by understanding nutritional requirements, interpreting food labels, and making informed choices about food selection and preparation. 4. Critically analyze the signs and symptoms of various diseases, disorders and deficiencies. 5. Evaluate the effectiveness of lifestyle interventions and programs in improving health outcomes, considering factors such as feasibility, sustainability, and cultural relevance.		

Course Contents/Syllabus:

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



Topic	CLO	Hours
UNIT I		
Introduction to Lifestyle Management: Definition of Health, Various Dimensions of Wellness	CLO1	6
UNIT II		
Nutritional Assessment: Calculation of Ideal Body weight for Men and Women, Body Mass Index, Body Composition Analysis.	CLO2	6
UNIT III		
Diseases and their management: Definition of diseases, Communicable and Non communicable diseases, Behavioral habits related to diseases.	CLO3	06
UNIT IV		
Meal Planning: Factors affecting food choices, food pyramid, various types of diets-Mediterranean Diet, Alkaline Diet, Detox diets, Keto Diet	CLO4	06
UNIT V		
Physical Activity and Stress management: Types of Physical exercises, Stress and its effect, role of Yoga and Meditation on Health	CLO5	08

Learning resources

Text Reading:

- Judith E. Brown, 2016, Nutrition Through the lifecycle (6th Edition). Wadsworth Publishing house
- Judith Sharlin and Sari Edelstein, 2010. Essentials of Life Cycle Nutrition. Jones and Bartlett Learning.

References:

- Public Health at the Crossroads – Achievements and Prospects. Robert Beaglehole and Ruth Bonita 2nd Edition Cambridge University Press
- Maxcy-Rosenau-Last Public Health & Preventive Medicine, Fourteenth Edition Ed Robert Wallace, MD, et al.
- Epidemiology and Management for Health Care: Sathe, et al. Popular Prakashan, Mumbai,
- International Public Health: Diseases, Programs, Systems, and Policies by Michael Merson, Robert E Black, Anne J Mills - Jones and Bartlett Publishers. 7) Preventive and Social Medicine, K Park, BansaridasBhanot Publishing House

Online Resources/E-Learning Resources

<https://vikaspedia.in/health/child-health/growth-and-development/monitoring-growth-and-development>



COURSE CURRICULUM

Name of the Program:		BSc Nutrition and Dietetics			Semester		3
Course Name		Post Harvest Management of Foods			Course Code		UBSND205/ SEC
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
02	0	00	02	02	40	60	-

Pre-Requisite: Food Science

Course Objectives (CO):

The objectives of **Post Harvest Management of Foods** are:

1. To recall about the role and importance of post-harvest technology in Indian industry
2. To recognize about the various management technologies on pre-harvest of fruits and vegetables
3. To apply the various management technologies on pre-harvest and post-harvest of fruits and vegetables.
4. To analyze the conventional and modern packaging and storage method
5. To evaluate about processed and fermented products of fruit and vegetables.

Course Learning Outcomes (CLO):

Students would be able to:

1. Students will be able to identify and importance of post-harvest technology in Indian industry
2. Explain the various management technologies on pre-harvest of fruits and vegetables
3. Apply knowledge of various management technologies on pre-harvest and post-harvest of fruits and vegetables
4. Analyze data processed and fermented products of fruit and vegetables
5. Evaluate the new processed product of fruits and vegetables.

Course Contents/Syllabus:

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

Descriptors/Topics	CLO	Hours
UNIT I		
a) Importance of post-harvest, Processing of fruits and vegetables b) Extent and possible causes of post harvest losses c) Pre-harvest factors affecting post-harvest quality, maturity, ripening and changes occurring during ripening	CLO 1	6
UNIT II		
a) Respiration and factors affecting respiration rate b) Harvesting and field handling, Value addition concept c) Storage (ZECC, cold storage, CA, MA)	CLO 2	6
UNIT III		
Principles and methods of preservation b) Drying/ Dehydration of fruits and	CLO 3	6



vegetables-Concepts and Methods c) Canning — Concepts and Standards Packaging of products		
UNIT IV		
a) Intermediate moisture food- Jam, jelly, marmalade, preserve, candy b) Fermented and non-fermented beverages Concepts and Standards c) Tomato products-Concepts and Standards	CLO 4	6
UNIT V		
Storage of Grains - Importance of storage structures- requirements, traditional & modern and underground & above ground storage and their improvements, FCI godowns. PDS. Agencies Controlling Food Losses - Role of SGC, FCI, CWC, SWC, IGSI in controlling food losses.	CLO 5	6
Total Hours		30

Learning resources

1. Postharvest: An introduction to the physiology and handling of fruits, vegetables and ornamentals. CABI International, Cambridge, USA.
2. 1. Hui, Y.H. (2008). Handbook of fruit and vegetable processing. Wiley India Pvt. Ltd., New Delhi

Reference Book:

1. Wills, R.B.H, McGlasson, W.S, Graham, D. and Joyce, D.C. (2009).
2. Sharma, S.K. (2010). Postharvest management and processing of fruits and vegetables. New India Publishing Agency, New Delhi.
3. Sharma, S.K. and Nautiyal, M.C. (2009). Postharvest technology of horticultural crops. New India Publishing Agency, New Delhi.

Online Resources/E-Learning Resources

1. E-Course of ICAR, New Delhi



COURSE CURRICULUM

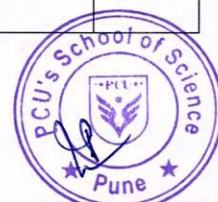
Name of the Program:		BSc ND		Semester : 3		Level: UG/PG	
Course Name		Post Harvest Management of Foods-LAB		Course Code/ Course Type		UBSND 205 / SEC	
Course Pattern		2024		Version		1.0	
Teaching Scheme				Assessment Scheme			
Theory	Practical	Tutorial	Total Credits	Hours	CIA(Continuous Internal Assessment)	ESA (End Semester Assessment)	Practical/Oral
	1		1	2			
Pre-Requisite:							
Course Objectives (CO):				The objectives of Post Harvest Management of Foods are: 1. To recall about the role and importance of post-harvest technology in Indian industry 2. To recognize about the various management technologies on pre- harvest of fruits and vegetables 3. To apply the various management technologies on pre-harvest and post-harvest of fruits and vegetables. 4. To analyze the conventional and modern packaging and storage method 5. To evaluate about processed and fermented products of fruit and vegetables.			
Course Learning Outcomes (CLO):				Students would be able to: 1. Students will be able to identify and importance of post-harvest technology in Indian industry 2. Explain the various management technologies on pre-harvest of fruits and vegetables 3. Apply knowledge of various management technologies on pre- harvest and post-harvest of fruits and vegetables 4. Analyze data processed and fermented products of fruit and vegetables 5. Evaluate the new processed product of fruits and vegetables.			

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:	Week 1	Practical Market survey of raw and preserved foods– Solar drying, Sun drying, oven drying.	CLO1	2



2	Practical 2:	Week 2	Drying of fruits and vegetables (blanched & UN-blanched)		2
3	Practical 3:	Week 3	Preservation of foods by freezing.	CLO 1	2
4	Practical 4:	Week 4	Preparation and storage of the following - squashes and syrups, cordials	CLO 2	2
5	Practical 5:	Week 5	Preparation and storage of the jam	CLO2	2
6	Practical 6:	Week 6	Preparation and storage of the jellies	CLO 2	2
7	Practical 7:	Week 7	Preparation and storage of the marmalades,	CLO 3	2
8	Practical 8:	Week 8,9,10	Preparation and storage of the, preserves and murabbas,	CLO3	6
9	Practical 9:	Week 11	Preparation and storage of the pickles with and without oil.	CLO4	2
10	Practical 10:	Week 12	Preparation and storage of the Chutneys	CLO 4	2
11	Practical 11:	Week 13	Demonstration on canning and bottling of vegetables	CLO 5	2
12	Practical 12:	Week 14,15	Visit and report writing	CLO 5	4
Total Hours					30

Learning resources

Text Books:

1. Postharvest: An introduction to the physiology and handling of fruits, vegetables and ornamentals. CABI International, Cambridge, USA.
2. 1. Hui, Y.H. (2008). Handbook of fruit and vegetable processing. Wiley India Pvt. Ltd., New Delhi

Reference Book:

1. Wills, R.B.H, McGlasson, W.S, Graham, D. and Joyce, D.C. (2009).
2. Sharma, S.K. (2010). Postharvest management and processing of fruits and vegetables. New India Publishing Agency, New Delhi.
3. Sharma, S.K. and Nautiyal, M.C. (2009). Postharvest technology of horticultural crops. New India Publishing Agency, New Delhi.

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



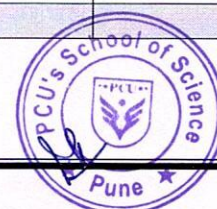
COURSE CURRICULUM

Name of the Program:		BSc Nutrition and Dietetics			Semester : 3		Level: UG	
Course Name		Introduction to Biostatistics			Course Code/ Course Type		UBSND 206	
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	
02	-	-	02	02	20	30		
Pre-Requisite: Basic Algebra								
Course Objectives (CO):			The objectives of Introduction to Biostatistics are: 1. To recall the concepts of basic algebra. 2. To recognize the difference in different modes of central tendency. 3. To apply the knowledge of biostatistics in to design and conduct research studies 4. To analyze data to understand which bio statistical knowledge to apply 5. To evaluate statistical data in case studies 6. To design descriptive techniques commonly used to summarize public health data.					
Course Learning Outcomes (CLO):			Students would be able to: 1: Understand the roles biostatistics serve in the discipline of public Health. 2: Apply basic statistical concepts of central tendency commonly used in public health and health Sciences 3: Demonstrate basic data dispersion techniques to generate results 4: Explain properties and application of probability distribution 5: Demonstrate statistical sampling techniques.					

Course Contents/Syllabus:

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

Descriptors/Topics	CLO	Hours
UNIT I		
Introduction to Statistics: meaning and definitions, Methods of data collection, Frequency distribution, Methods of frequency distribution – Inclusive and exclusive methods.	CLO 1	06
UNIT II		
Measures of Central Tendency: Definitions, Measures of central tendency; meaning, Arithmetic mean- Harmonic mean- weighted mean, Case studies	CLO 2	06
UNIT III		
Dispersion: Measures of dispersion: meaning, standard deviation, standard error of mean, variance and coefficient of variation, Case studies.	CLO 3	06
UNIT IV		
Probability Distributions: Theoretical distributions – Binomial, Poisson and Normal distributions (without proof) – properties and applications of the above distributions, Case studies.	CLO 4	06
UNIT V		



Sampling theory: Definition and concept of Sampling: Different sampling schemes/plans simple random sampling, stratified random sampling cluster sampling, multi-stage sampling.	CLO 5	06
Total Hours		30

Learning resources

Textbooks:

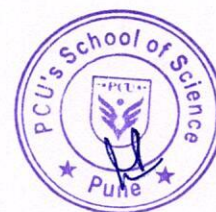
4. Kothari C.R, "Research Methodology: Methods & Techniques". 2nd Revised Edition, New Age International Publishers, New Delhi, 2009.
5. Veer Bala Rastogi Fundamentals of Biostatistics, 2nd Edition, VB Publisher, 2009

Reference Books:

- Arora et al., Comprehensive Statistical Methods. 2nd Edition, S. Chand, 2007.
- Wayne Daniel, Biostatistics: A foundation for Analysis in the Health Sciences, 8th Edition, Wiley, 2004.

Online Resources/E-Learning Resources

<https://biostat.duke.edu/research/berd-methods-core/learning-and-training/biostatistics-resources-non-statisticians>



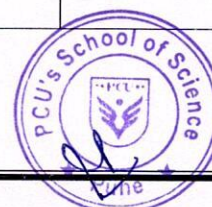
COURSE CURRICULUM

Course Contents/Syllabus:

Name of the Program:		B.Tech/B.B.A/B.C. A/B.Sc/B.Pharm			Semester: 3/4		Level: UG	
Course Name		UHV-II: Understanding Harmony			Course Code/ Course Type		ACUHV201/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	0	0	0	2	50	-	-	
Pre-Requisite:								
Course Objectives (CO):					The objectives of Universal Human Value-Understanding Harmony are: 1. To train the student for Development of a holistic perspective based on self-exploration about themselves (human being), family, society and nature/existence. 2. To comprehend (or develop clarity) the harmony in the human being, family, society and nature/existence 3. To strengthen self-reflection. 4. To infuse a sense of commitment and courage to act 5. To understand Holistic Understanding of Harmony on Professional Ethics			
Course Learning Outcomes (CLO):					Students would be able to: 1. Analyze the most important requirement for any human being 2. Apply correct appraisal of Physical needs, meaning of Prosperity in detail 3. Analyze salient values in relationship, Friends and Foes, Empathy, False Prestige. 4. Develop holistic perception of harmony at all levels of existence 5. Apply the Holistic Understanding of Harmony on Professional Ethics			

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

Descriptors/Topics	CLO	Hours
UNIT I		
Course Introduction - Need, Basic Guidelines, Content and Process for Value Education Purpose and motivation for the course, recapitulation from Universal Human Values-I, Self-Exploration-what is it? - Its content and process; Personality Traits- Self Excellence, „Natural	CLO 1	8



Acceptance" and Experiential Validation- as the process for self-exploration, Adaptability, Belief and Understanding- Self discipline, Continuous Happiness and Prosperity- A look at basic Human Aspirations, Right understanding, Relationship and Physical Facility- the basic requirements for fulfilment of aspirations of every human being with their correct priority, Understanding Happiness and Prosperity correctly- A critical appraisal of the current scenario, Method to fulfil the above human aspirations: understanding and living in harmony at various levels.		
UNIT II		
Understanding Harmony in the Human Being - Harmony in Myself: Understanding human being as a co-existence of the sentient „I" and the material „Body", Understanding the needs of Self („I") and „Body" - happiness and physical facility, Understanding the Body as an instrument of „I" (I being the doer, seer and enjoyer)- Habits and Hobbies, SWOT Analysis (Activity) ,Understanding the characteristics and activities of „I" and harmony in „I" – Dalai Lamas" Tibetan Personality Test – Dr. Menninger"s Psychometric Test., Understanding the harmony of I with the Body: Sanyam and Health; correct appraisal of Physical needs, meaning of Prosperity in detail	CLO 2	5
UNIT III		
Understanding Harmony in the Family and Society- Harmony in Human-Human Relationship: Understanding values in human-human relationship; meaning of Justice (nine universal values in relationships) and program for its fulfilment to ensure mutual happiness; Trust and Respect as the foundational values of relationship, Understanding the meaning of Trust; Difference between intention and competence, Understanding the meaning of Respect, Difference between respect and differentiation; the other salient values in relationship, Friends and Foes, Empathy, False Prestige.	CLO 3	5
UNIT IV		
Understanding Harmony in the Nature and Existence - Whole existence as Coexistence: Understanding the harmony in the Nature and its Equanimity, Respect for all, Nature as Teacher, Interconnectedness and mutual fulfilment among the four orders of nature- recyclability and self-regulation in nature, Understanding Existence as Co-existence of mutually interacting units in all-pervasive space, Holistic perception of harmony at all levels of existence.	CLO 4	5
UNIT V		
Implications of the above Holistic Understanding of Harmony on Professional Ethics: Natural acceptance of human values, Definitiveness of Ethical Human Conduct, Basis for Humanistic Education, Humanistic Constitution and Humanistic Universal Order, Vision for the Holistic alternatives, UHVs for entrepreneurship	CLO 5	7
Total Hours		30

Learning resources

BSc. Nutrition & Dietetics



Textbooks:

1. Human Values and Professional Ethics by R R Gaur, R Sangal, G P Bagaria, Excel Books, New Delhi, 2010
2. Jeevan Vidya: Ek Parichaya, A Nagaraj, Jeevan Vidya Prakashan, Amarkantak, 1999.
3. Human Values, A.N. Tripathi, New Age Intl. Publishers, New Delhi, 2004.

Reference Books:

1. The Story of Stuff (Book).
2. The Story of My Experiments with Truth - by Mohandas Karamchand Gandhi
3. Small is Beautiful - E. F Schumacher
4. Slow is Beautiful - Cecile Andrews

Online Resources/E-Learning Resources

1. <https://www.studocu.com/in/document/jss-science-and-technology-university/human-values/uhv-handout-2-harmony-in-the-human-being/>
2. <https://vvce.ac.in/wp-content/uploads/2021/04/Realising-Aspirations-of-NEP2020-UHV.pdf>
3. https://vemu.org/uploads/lecture_notes/22_12_2022_1850871704.pdf

CIA Guidelines

Online Quiz (Based on MCQ)- 20 marks

Activity (with short Report Submission) - 20 Marks

Academic Sincerity - 10 marks

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

Few of suggested topics related to UHVII-Understand Harmony are:

Debate Topics

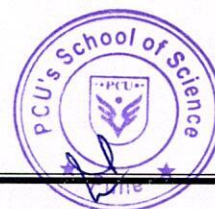
- Materialistic things make you happy
- Happiness in individualism and family
- Spirituality vs Materialistic
- Satisfaction of Body and self (Soul)

Assignment

Students maintain a reflective account of the times they felt happy and prosperous and the causes of that happiness and prosperity for them.

References:

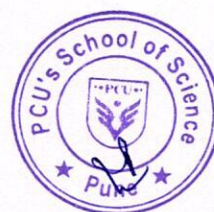
BSc. Nutrition & Dietetics



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



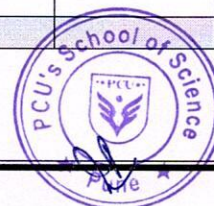
Course Contents/Syllabus:

Name of the Program:		B. Sc. Nutrition and Dietetics		Semester : 3		Level: UG/PG	
Course Name		Basic Japanese language skill		Course Code/Course Type		UFL 201B	
Course Pattern		2024		Version		1.0/1.1/1.2...	
Teaching Scheme					Assessment Scheme		
Theory	Practical	Tutorial	Total Credits	Hours	CIA (Continuous Internal Assessment)	ESA (End Semester Assessment)	Practical/ Oral

Pre-Requisite: Desire to get acquainted with the Japanese language. Basic knowledge of Hiragana and Katakana.

Course Objectives (CO):	The objectives of (Basic Japanese language skill) are: 1. To meet the needs of ever growing industry with respect to language support. 2. Textbook reading 3. To get introduced to Japanese society and culture through language.
Course Learning Outcomes (CLO):	After learning the course, the students will be able to: • CLO1: Listen and speak with adjectives. • CLO2: Write and Speak basic sentences with adverb. • CLO3: Read noun denoting position. • CLO4: Speak quantifiers. • CLO5 : Write kanji.

Descriptors/Topics	CLO	Hours
UNIT I		
Express speakers desire: Speaking : Speakers desire Hoshii and tai form Purpose of going, coming and returning	CLO 1	
UNIT II		
Verb Conjugation : Writing : practice of various verb groups / Write and Speak basic sentences with adverb.	CLO 2	
UNIT III		
Read Noun denoting position / Verb “Te” form : eaking and Reading : with using te form	CLO 3	
UNIT IV		



Connect sentences with te form :	CLO 4	
Listening and Speaking : conversation on connect sentences / quantifiers		
UNIT V		
Kanji: Writing :Kanji Related Verbs	CLO 5	
Total Hours		

Practical Plan

Assignment/Practical/Activity Number	Assignment/Practical/Activity Title	Week Number/Turn	Details	CLO	Hours

Learning resources

Textbooks:

1. Minna no Nihongo , “ Japanese for everyone” ,Elementary Main Textbook , Goyal Publishers & Distributors Pvt. Ltd.

Online Resources/E-Learning Resources

1. U Tube Japanese Language Videos
2. Practicing the language script through App.



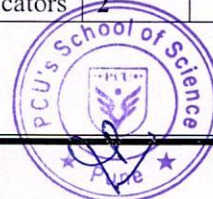
COURSE CURRICULUM

Course Contents/Syllabus:

Name of the Program:		BSc ND		Semester : 3		Level: UG	
Course Name		Growth Monitoring and Health Policies		Course Code/ Course Type		UBSND 204/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	40	60	-
Pre-Requisite:							
Course Objectives (CO):					The objectives of Growth Monitoring and Health Policies are: 1. The students should have the knowledge regarding epidemiology, prevention, control & management of diseases of public health importance. 2. To get the knowledge of all relevant public health laws and institutions of public health importance. 3. The candidate Should know the natural history of diseases 4. They should be able to plan, implement & evaluate school health services 5. They should be able to plan, implement & evaluate programs related to Occupational Health.		
Course Learning Outcomes (CLO):					Students would be able to: 1. They should acquire administrative skills essential for smooth functioning of health establishments 2. They should be able to conduct epidemiological investigation of various diseases during epidemic. 3. They should know the natural history of diseases 4. They should be able to plan, implement & evaluate school health services 5. They should be able to plan, implement & evaluate programmes related to Occupational Health.		

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

Descriptors/Topics	CLO	Hours
UNIT I		
Introduction. Current Scenario of Growth Monitoring and Health Policies, Prevention of diseases in the community, health situation- past & present, History of public health, Place & role of preventive medicine in development of social medicine, community health, community medicine.	CLO 1	6
UNIT II		
Health, Changing concepts, Definition, Dimensions, Concepts of wellbeing, PQLI, HDI, Spectrum of Health, Determinants of Health, Rights & responsibilities, Indicators	CLO 2	6



of health, Mortality, Morbidity, Disability, Others, Health care system, Characteristics, Levels, Primary Health Care		
UNIT III		
Disease, Concept, Natural history of diseases	CLO3	6
UNIT IV		
Nutritional problems, LBW, PEM, Xerophthamia, Nutritional anaemia, IDD, Endemic fluorosis	CLO4	6
UNIT V		
National Nutrition Policy & Programmes, Applied aspects of nutrition (dietetics), Reproductive & Child Health (RCH)	CLO5	6
Total Hours		30

Learning resources

Text Reading:

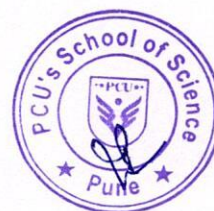
- Judith E. Brown, 2016, Nutrition Through the lifecycle (6th Edition). Wadsworth Publishing house
- Judith Sharlin and Sari Edelstein, 2010. Essentials of Life Cycle Nutrition. Jones and Bartlett Learning.

References:

- Public Health at the Crossroads – Achievements and Prospects. Robert Beaglehole and Ruth Bonita 2nd Edition Cambridge University Press
- Maxcy-Rosenau-Last Public Health & Preventive Medicine, Fourteenth Edition Ed Robert Wallace, MD, et al.
- Epidemiology and Management for Health Care: Sathe, et al. Popular Prakashan, Mumbai,
- International Public Health: Diseases, Programs, Systems, and Policies by Michael Merson, Robert E Black, Anne J Mills - Jones and Bartlett Publishers. 7) Preventive and Social Medicine, K Park, BansaridasBhanot Publishing House

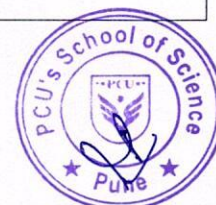
Online Resources/E-Learning Resources

<https://vikaspedia.in/health/child-health/growth-and-development/monitoring-growth-and-development>



COURSE CURRICULUM

Name of the Program:		BSc Clinical Psychology		Semester : 3		Level: UG	
Course Name		Gender Equality and Equity		Course Code/ Course Type		UBSCP205/ OE	
Course Pattern		2023		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 Gender Equality and Equity are: 1. To explore the concepts of gender equality and equity, including their definitions, historical contexts, and theoretical frameworks. 2. To analyze the intersections of gender with other social identities such as race, class, sexuality, and ability, and understand how these intersections shape experiences of inequality. 3. To examine the impacts of gender inequality and inequity on individuals, communities, and societies, both domestically and globally. 4. To critically evaluate policies, laws, and practices aimed at promoting gender equality and equity, and assess their effectiveness and limitations. 5. To cultivate skills for advocating for gender equality and equity in various contexts, including policymaking, organizations, and everyday interactions.		
Course Learning Outcomes (CLO):					Students would be able to: 1. Define and differentiate between the concepts of gender , sex, sexual orientation and key terms related to gender. 2. Identify and analyze gender stereotypes and intersectionality of gender with sex, race, class, age, diversity .		

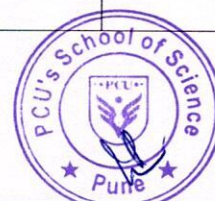


	3. Critically assess the sources of gender bias, prejudice and gender disparity and understand the concept of gender equity 4. Analyze feminism and the women's movement in India and the world and understand the concept of Gender Equality. 5. Evaluate the effectiveness of policies and interventions designed to address gender inequality and promote equity.
--	--

Course Contents/Syllabus:

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

Descriptors/Topics	CLO	Hours
UNIT I		
Introduction: Understanding the concept of Gender, difference between gender, sex, sexual orientation, Terms related to gender- gender blind, gender awareness, gender analysis, gender balance, gender roles, gender norms,	CLO1	6
UNIT II		
Gender stereotypes- institutional /systematic influences on gender stereotypes, Intersectionality with Sex, Race, Class, Age, Disability, Diversity. Gender gap and patterns of gender inequality	CLO2	6
UNIT III		
Gender Equity: Sources of Gender Bias and Prejudice, Causes of Gender Disparity, Gender Equity in Education, Gender Equity at the workplace(creating equal opportunities)	CLO3	6
UNIT IV		
Gender Equality: Feminism and the Women's movement in India and the world, Relationship Between Social Movements for gender rights, queer rights, disability rights, anti-caste, and anti-race movements	CLO4	6
UNIT V		
Legal and Political frameworks for Gender equality and Equity : International and National Policies and Laws (major ones), Institutional Mechanisms, UGC mandate	CLO5	6
Total Hours		30



Learning resources

Textbooks:

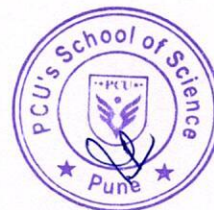
1. Psychology and Gender: An Introduction, Sage International Publications, 2021- Dr Sadhana Natu
3. Gender Studies and Women's Studies Readers- Mary John Edited Volume, 2008

Reference Books:

1. Psychology and Gender: An Advanced Reader, Routledge International Publications, 2023- Dr Sadhana Natu

Online Resources/E-Learning Resources:

1. <https://youtu.be/9EBkS2kE7uk?feature=shared>
2. <https://youtu.be/MIXZyNtaoDM?feature=shared>



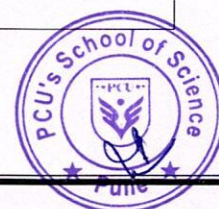
SEMESTER - IV

COURSE STRUCTURE



COURSE CURRICULUM

Name of the Program:		BSc Nutrition and Dietetics		Semester: 4		Level: UG	
Course Name		Metabolic and Lifestyle Disorders		Course Code/ Course Type		UBSND 209/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, Nutrition and metabolism							
Course Objectives (CO):				The objectives of Metabolic and Lifestyle Disorders are: 1. To familiarize the students with the basics and fundamentals of Metabolic and Lifestyle Disorders 2. To learn the digestion absorption and metabolism of essential macronutrients (carbohydrates, proteins, fats) and micronutrients (vitamins, minerals). 3. Identify the primary sources of each macronutrient and micronutrient in the diet 4. should be able to recognize the proper metabolic laboratory testing to evaluate for a suspected inborn error of metabolism. 5. should recognize the common presentations and treatments of inborn errors of metabolism.			
Course Learning Outcomes (CLO):				Students would be able to: 1. Use basic and specific laboratory tests to aid in the diagnosis of metabolic disease. 2. Understand the capabilities and limitations of modern newborn screening approaches. 3. Recognize that urea cycle disorders can result in hyperammonemia, which is a medical emergency that requires prompt diagnosis and treatment.			



	4. Develop a basic framework for understanding inborn errors of metabolism to aid in recognition and diagnosis of these conditions. 5. Appreciate that although most classic metabolic disorders present in infancy, most conditions can also present with milder variants later in life.
--	---

Course Contents/Syllabus:

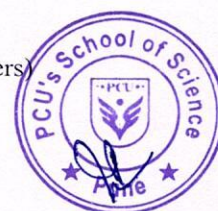
(All the units carry equal weightage in Summative Assessment and equal engagement)

Descriptors/Topics	CLO	Hours
UNIT I		
Carbohydrates, proteins and lipid- digestion, absorption, metabolism. Inborn errors of metabolism. Basic laboratory evaluations, specific biochemical laboratory evaluations	CLO 1	9
UNIT II		
Metabolic disorders of Carbohydrates: Glucose homeostatics determined by insulin/ glycogen ratio, Glucose Galactose Malabsorption (GGM); carbohydrates free diets and its metabolic consequences, diabetes, obesity.	CLO 2	9
UNIT III		
Protein Metabolism Disorders : Amino Acidopathies, Phenylketonuria, Maple Syrup Urine Disease, Homocystinuria. Urea Cycle Disorders- Hyperammonemia	CLO3	9
UNIT IV		
Lipid Metabolism Disorders: Fatty Acid Oxidation Disorders, Medium-chain Acyl CoA Dehydrogenase (MCAD) Deficiency, Primary Carnitine Deficiency.	CLO4	9
UNIT V		
Glycogen storage disorders (GSDs), lysosomal storage disorders, mitochondrial disorders, Adrenoleukodystrophy (ALD), Hereditary hemochromatosis	CLO5	9
Total Hours		45

Learning resources:

Textbooks:

1. Gregory M. Rice and Robert D. Steiner Inborn Errors of Metabolism (Metabolic Disorders)
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)
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.

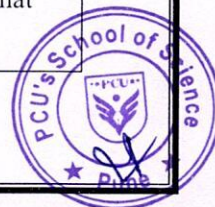
Online Resources/E-Learning Resources

1. <https://www.ncbi.nlm.nih.gov/books/NBK22230/>
2. <http://ped.inreview.aappublications.org/>
3. Rice, G. M., & Steiner, R. 2016. Inborn Errors of Metabolism (Metabolic Disorders). Pediatrics in Review, (37), 3-17.
4. An Introduction to Metabolic Disorders at www.emdnet.net.co.uk/PDF/12-metabolic.pdf
Saudubray, J. M., van den Berghe, G., & Walter, J. H. (Eds.). 2012. Inborn Metabolic Diseases, 5th Ed., Heidelberg, Germany: Springer.



COURSE CURRICULUM

Name of the Program:		BSc Nutrition and Dietetics		Semester: 4		Level: UG	
Course Name		Metabolic and Lifestyle Disorders- lab		Course Code/ Course Type		UBSND 210/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, Nutrition and metabolism							
Course Objectives (CO):				The objectives of Metabolic and Lifestyle Disorders are: 1. To familiarize the students with the basics and fundamentals of Metabolic and Lifestyle Disorders 2. To learn the digestion absorption and metabolism of essential macronutrients (carbohydrates, proteins, fats) and micronutrients (vitamins, minerals). 3. Identify the primary sources of each macronutrient and micronutrient in the diet 4. Should be able to recognize the proper metabolic laboratory testing to evaluate for a suspected inborn error of metabolism. 5. Should recognize the common presentations and treatments of inborn errors of metabolism.			
Course Learning Outcomes (CLO):				Students would be able to: 1. Use basic and specific laboratory tests to aid in the diagnosis of metabolic disease. 2. Understand the capabilities and limitations of modern newborn screening approaches. 3. Recognize that urea cycle disorders can result in hyperammonemia, which is a medical emergency that requires prompt diagnosis and treatment.			



	4. Develop a basic framework for understanding inborn errors of metabolism to aid in recognition and diagnosis of these conditions. 5. Appreciate that although most classic metabolic disorders present in infancy, most conditions can also present with milder variants later in life.
--	---

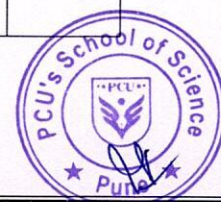
Course Contents/Syllabus:

Course Contents/Syllabus:

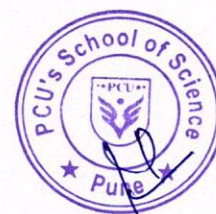
(All the Practical's carry equal weightage in Summative Assessment and equal engagement)

Practical Plan

Practical Number	Assignment/Practical/Activity Title	Week Number	Details	Clo	Hours
1	Principles Of Planning Diet	Week 1	Principles Of Planning Diet	1	2
2.	Exchange List And Food Composition Tables For Meal Planning	Week 2,3	Exchange List And Food Composition Tables For Meal Planning	1	4
3.	Demonstration Of Diet Software	Week 4	Demonstration Of Diet Software	2	2
4.	Diet Plan For Non-Insulin Dependent Diabetes Mellitus (NIDDM)	Week 5	Diet Plan For Non-Insulin Dependent Diabetes Mellitus (NIDDM)	2	2
5.	Diet Plan For Insulin Dependent Diabetes Mellitus (IDDM)	Week 6	Diet Plan For Insulin Dependent Diabetes Mellitus (IDDM)	3	2
6.	Prepare A Dish For NIDDM And IDDM	Week 7,8	Prepare A Dish For NIDDM And IDDM	3	2
7.	Diet Plan For Gout	Week 9,10	Diet Plan For Gout	4	4
8.	Prepare A Dish For Patient Suffering From Gout	Week 10,11	Prepare A Dish For Patient Suffering From Gout	4	4
9.	Diet Plan For Lactose Intolerance	Week 12	Diet Plan For Lactose Intolerance	5	2
10	Special Feeding Methods : Survey For Commercial Enteral Feeds Available In The Market	Week 13	Survey For Commercial Enteral Feeds	5	2



			Available In The Market		
11	Visit To Hospital	Week 14	Visit To Hospital	5	2
12	Hospital Visit And Report Writing	Week 15	Hospital Visit And Report Writing	5	2
			Total		30



Learning resources:

Textbooks:

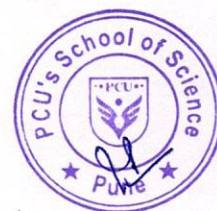
1. Gregory M. Rice and Robert D. Steiner Inborn Errors of Metabolism (Metabolic Disorders)
2. Human Nutrition and Dietetics –Davidson S. Passmore
3. Normal and Therapeutic Nutrition- Corinne. H.Robinson & Marilyn Lawler

Reference Books:

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

Online Resources/E-Learning Resources

1. <https://www.ncbi.nlm.nih.gov/books/NBK22230/>
2. <http://pedsinreview.aappublications.org/>
3. Rice, G. M., & Steiner, R. 2016. Inborn Errors of Metabolism (Metabolic Disorders). Pediatrics in Review, (37), 3-17.
4. An Introduction to Metabolic Disorders at www.emdnmitonet.co.uk/PDF/12-metabolic.pdf
Saudubray, J. M., van den Berghe, G., & Walter, J. H. (Eds.). 2012. Inborn Metabolic Diseases, 5th Ed., Heidelberg, Germany: Springer.



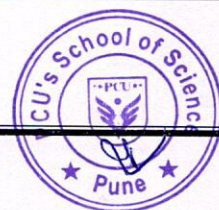
COURSE CURRICULUM

Name of the Program:		BSc ND		Semester : 4		Level: UG	
Course Name		Nutrition in Life Stages: Adolescence till Geriatrics		Course Code/ Course Type		UBSND 211 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:							
Course Objectives (CO):				The objectives of Nutrition in Life Stages Adolescence till Geriatrics are: 1: To Recall the nutritional needs specific to each life stage. 2: To Explain the role of nutrition in the development and maintenance of health through different life stages. 3: To Apply knowledge of dietary guidelines to create age appropriate meal plans for individuals at different life stages. 4: To Analyze dietary patterns to identify potential nutritional deficiencies or special requirements across different life stages. 5: To Design, formulate and develop the product targeting a specific life stage, incorporating principles of healthy eating, cultural sensitivity, and accessibility.			
Course Learning Outcomes (CLO):				Students would be able to: 1: Understand the nutritional requirements for infants and young children, including breastfeeding guidelines, introduction of solid foods, and prevention of common nutritional deficiencies. 2: Develop strategies for maintaining optimal nutrition and healthy lifestyle habits throughout adulthood, including meal planning, portion control, and managing dietary restrictions. 3: Design dietary plans that meet the unique nutritional requirements of pregnant and lactating women, considering factors such as increased energy needs, micronutrient supplementation, and food safety. 4: Develop personalized dietary interventions to support healthy aging, including strategies to maintain muscle mass, bone health, cognitive function, and overall quality of life. 5: Develop Nutrition Education Program effectively for the various Age groups.			

Course Contents/Syllabus:

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

Descriptors/Topics	CLO	Hours
UNIT I		
Nutrition of School Children and Adolescence : Introduction, Nutritional needs, School Children, Nutritional Requirements, Food Requirements, Packed Lunch –	CLO 1	9



Points to be considered, Feeding Problems – Underweight, Obesity, Constipation, Dental Caries		
UNIT II		
Adolescence : Nutritional Requirements, Food Requirements, Nutrition related problems– Anaemia, Eating Disorders - Bulimia nervosa, Anorexia nervosa, Binge eating	CLO 2	9
UNIT III		
Adult Nutrition : Introduction, Nutritional needs of Adult, Classification according to Activity- Sedentary, Moderate, Heavy Work; Nutritional Requirements	CLO 3	9
UNIT IV		
Pregnancy : Nutritional Requirements , Food Requirements, Dietary Problems in Pregnancy, Complications in Pregnancy Lactation, Role of Hormones in Milk Production, Factors affecting Volume and Composition of Breast milk, Nutritional Requirements, Food Requirements	CLO4	9
UNIT V		
Geriatric Nutrition, Nutritional Requirements, Food Requirements , Nutrition related problems - Osteoporosis	CLO 5	9
Total		45

Learning resources

Text Books:

4. NUTRITION: A LIFECYCLE APPROACH: Ravinder Chadha and Pulkit, ISBN 812505930X
5. Essentials Of Life Cycle Nutrition by Judith Sharlin Sari Edelstein, Jones & Bartlett, Author: Judith Sharlin Sari Edelstein, Publisher: Jones & Bartlett e-ISBN: 978-1-68108-108-3, 2016.
6. Handbook of Food and Nutrition by Dr.Swaminathan (by The Bangalore press)

Reference Book:

3. Textbook of Human Nutrition 4 Edition, by Bamji M S (Author)
4. Fundamentals Of Foods, Nutrition And Diet Therapy 6Th Edition 2012 by Mudambi, SumatiR,Rajagopal, MV, New Age International (P) Ltd Publishers

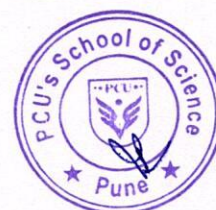
Online Resources/E-Learning Resources

<https://2012books.lardbucket.org/pdfs/an-introduction-to-nutrition/s17-nutrition-through-the-life-cyc.pdf>

<https://www.yumpu.com/en/document/view/65500126/nutrition-through-the-life-cycle-4th-edition-4th-ed>



Name of the Program:		BSc Nutrition and Dietetics			Semester : 4		Level: UG	
Course Name		Maternal and Child Nutrition			Course Code		UBSND 214	
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	
03		00	03	04	40	60		
Pre-Requisite:								
Course Objectives (CO):				The objective of Maternal and Child Nutrition are: 1. Describe the role of maternal and child nutrition in the lifelong health of the population. 2. To understand the physiological and metabolic adaptations of pregnancy and lactation. Access to the resources for assessment, assurance, and policy development for maternal and child nutrition 3. This course provides a comprehensive introduction to the nutritional requirements and assessment of the nutritional needs during pregnancy, lactation, infancy, and childhood at the individual and community level. 4. Evaluate the effectiveness of nutrition and other programs 5. Evaluate and implement interventions aimed at improving maternal and child nutrition in low-income countries.				
Course Learning Outcomes (CLO):				Students would be able to: 1. To know the importance of maternal nutrition, factors affecting the pregnancy outcome as well as the complications during pregnancy. 2. To have knowledge of physiological and metabolic adaptations during pregnancy and lactation. 3. Know the growth and development and feeding practices of infant and childhood. 4. To be scientifically knowledgeable about the nutritional requirements during pregnancy, lactation, infancy and childhood 5. Evaluate the effectiveness of nutrition and other programs				



Course Contents/Syllabus:

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

Descriptors/Topics	CLO	Hours
UNIT I		
Pregnancy: Importance of maternal nutrition, Current scenario of maternal and child nutrition in India, Vital Statistics, Physiological and psychological changes during pregnancy, Nutritional needs during pregnancy, Factors affecting the outcome of pregnancy, Pregnancy in special conditions, Adolescent pregnancy, Pregnancy and AIDS, Intrauterine Growth Retardation (IUGR), Congenital malformations, Foetal Alcoholic Syndrome, Gestational Diabetes Mellitus, Pregnancy Induced Hypertension, Complications of Pregnancy and its management	CLO 1	6
UNIT II		
Lactation: Development of mammary tissues and role of hormones Physiology of lactation, Nutritional needs of lactating mothers, Composition of human milk, Effect of nutritional status of lactating mother on quantity and quality of breast milk, Breast feeding: factors affecting breast feeding, Breast feeding support and counseling, role of BPNI in promotion of breast feeding in India, World Breast Feeding Week	CLO 2	6
UNIT III		
Growth and development during infancy, Immunization Schedule, Nutrition requirements during infancy, Food requirements and modification of foods for infants, Pre-term, LBW infants: implications for feeding and management, Weaning and Recent guidelines in infant feeding and complimentary feeding	CLO 3	6
UNIT IV		
Growth and development of children, Growth monitoring using growth charts, Nutritional requirements of pre-school and school going children, Nutritional challenges and nutrition for child with special need, Overview of maternal and child nutrition policies and programmes in India	CLO 4	6
UNIT V		
Overview of maternal and child nutrition policies and programmes in India	CLO 5	6
National and international Programmes, ICDS, NRHM		
Total Hours		30

Learning resources**Textbooks:**

1. B. Srilakshmi, 2014, Dietetics (7th Edition). New Age International Publishers, New Delhi
2. Judith E. Brown, 2016, Nutrition Through the lifecycle (6th Edition). Wadsworth Publishing house.
3. Judith Sharlin and Sari Edelstein, 2010. Essentials of Life Cycle Nutrition. Jones and Bartlett Learning.
4. Joshi Shubhangini, A., 2017, Nutrition and Dietetics. McGraw Hill Education Publication.



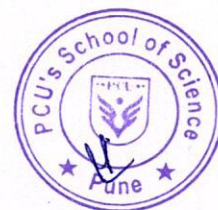
Reference Books:

Jyotsana Gupta, 2008, Child Nutrition. Rajat Publications, New Delhi.

Online Resources/E-Learning Resources

<https://cdl.phfi.org/portal/node/313>

https://onlinecourses.nptel.ac.in/noc22_bt01/preview



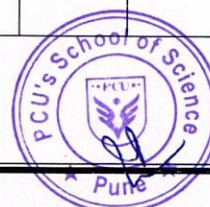
COURSE CURRICULUM

Name of the Program:		BSc Nutrition and Dietetics			Semester :4		Level: UG	
Course Name		Food Microbiology			Course Code		UBSND 212	
Course Pattern		2023			Version		01	
Teaching Scheme					Assessment Scheme			
Theory	Practical	Tutorial	Total Credits	Hrs	CIA (Continuous Internal Assessment)	ESA (End Semester Assessment)	Practical Oral	
03		00	03	04	40	60		
Pre-Requisite: Basic Algebra								
Course Objectives (CO):			The objective of Food Microbiology are: 1. This course will help understand the current trends and concepts related to Microbiology of food and other food products. 2. Gives an insight into various types of food borne diseases and their prevention and characteristics. 3. To understand about microbes as food and food products 4. Understand the role of microorganisms in food preservation, fermentation 5. To Acquire & remember the microbes causing food intoxications and food infections.					
Course Learning Outcomes (CLO):			Students would be able to: 1. Understand the significance and activities of microorganisms in food the role of intrinsic and extrinsic factors on growth and survival of microorganisms and attain information on microbial food spoilage. 2. Understand the principles in traditional food preservation techniques including salting, pickling, refrigeration, freezing, oxidation, and canning/bottling and chemical preservation. 3. Understand about microbes as food and food products 4. Analyze types of starter cultures like Lactic acid bacteria, fermented milk products, probiotics, SCP and Edible mushrooms. 5. Acquire& remember the microbes causing food intoxications and food infections.					

Course Contents/Syllabus:

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

Descriptors/Topics	CLO	Hours
UNIT I		
Introduction, Scope and History of Food Microbiology: Food as a substrate for microorganisms, Microbial flora of food: fruits, vegetables, meat, eggs, biochemical, temperature and pathogenic types of milk, Factors affecting kinds and numbers of microorganisms: intrinsic and extrinsic Food and milk borne infections: Microorganism involved, source of infection, characteristics in brief: Bacterial infections: <i>Salmonella</i> sp., <i>Shigella</i> sp., <i>E. coli</i> , <i>Vibrio</i> sp.	CLO 1	6



UNIT II		
Microbial growth and food poisoning Microbial Growth Characteristics- Bacterial growth curve, microbial reproduction and microbial growth in food. Factors affecting the growth of microorganisms in food. Food poisoning Role of Staphylococcus aureus, Clostridium botulinum and Salmonella spp. Molds as poisoning agents:	CLO 2	6
UNIT III		
Microbes as Food and Food Products: Fermented dairy products: a) Starter culture, b) Cheese: Types, curdling, processing, ripening, c) Other fermented dairy products: Yogurt, cultured buttermilk, acidophilus milk, d) Kefir and cultured sour milk. Introduction to probiotics, prebiotics and synbiotics, Fermented food products: Pickles, sauerkraut and bread Microbes as food: Mushrooms, spirulina and yeasts	CLO 3	6
UNIT IV		
Microbial Food Spoilage and Preservation: Microbial Spoilage of food : Spoilage of milk and milk products, fruits, vegetables, eggs, meat, Spoilage of canned foods	CLO 4	6
UNIT V		
Preservation of food and Milk: General principles, Methods of preservation, Use of aseptic handling, High temperature: Pasteurization, sterilization, canning, Low temperature: Refrigeration and freezing, Dehydration, Osmotic pressure, Preservatives, Radiations: Ionizing and non-ionizing radiation	CLO 5	6
Total Hours		30

Learning resources

Textbooks:

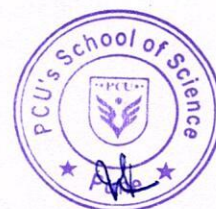
- 1) Frazier William C and Westhoff, Dennis C. Food Microbiology, TMH, New Delhi, 2004
- 2) Jay, James M. Modern Food Microbiology, CBS Publication, New Delhi, 2000
- 3) Garbutt, John. Essentials of Food Microbiology, Arnold, London, 1997

Reference Books:

1. Indian Standards: Food Hygiene-Microbiological Criteria-Principles for Establishment and Application
2. Fssai: Manual of methods of analysis of foods- food safety and standards authority of India, Ministry of health and family welfare, Government of India, New Delhi, 2015

Online Resources/E-Learning Resources

https://www.fsis.usda.gov/sites/default/files/media_file/2021-11/06a_IM_Food-Microbiology-12102018.pdf



COURSE CURRICULUM

Name of the Program:		BSc Nutrition and Dietetics		Semester:4		Level: UG	
Course Name		Food Microbiology- Lab		Course Code		UBSND213	
Course Pattern		2024		Version		01	
Teaching Scheme							
Assessment Scheme							
Theory	Practical	Tutorial	Total Credits	Hours	CIA (Continuous Internal Assessment)	ESA (End Semester Assessment)	Practical/ Oral
02	01	00	03	04			
Pre-Requisite:							
Course Objectives (CO):			The objective of Food Microbiology are: 1. This course will help understand the current trends and concepts related to Microbiology of food and other food products. 2. Gives an insight into various types of food borne diseases and their prevention and characteristics. 3. To understand about microbes as food and food products 4. Understand the role of microorganisms in food preservation, fermentation 5. To Acquire & remember the microbes causing food intoxications and food infections.				
Course Learning Outcomes (CLO):			Students would be able to: 1. Understand the significance and activities of microorganisms in food the role of intrinsic and extrinsic factors on growth and survival of microorganisms and attain information on microbial food spoilage. 2. Understand the principles in traditional food preservation techniques including salting, pickling, refrigeration, freezing, oxidation, and canning/bottling and chemical preservation. 3. Understand about microbes as food and food products 4. Analyze types of starter cultures like Lactic acid bacteria, fermented milk products, probiotics, SCP and Edible mushrooms. 5. Acquire& remember the microbes causing food intoxications and food infections.				



Course Contents/Syllabus:

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

Practical Plan

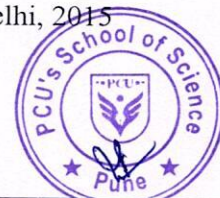
Practical Number	Assignment/Practical/Activity Title	Week Number	Details	CLO	Hours
1	Introduction to the Basic Microbiology Laboratory Practices and Equipment's used in microbiology laboratory	Week 1	Introduction to the Basic Laboratory Practices	1	2
2.	Preparation of slant, stab and plates using nutrient agar	Week 2,3	Preparation of Media	1	4
3.	Biological methods: Generalized scheme for microbiological examination	Week 4	microbiological examination	2	2
4.	Direct microscopic examination, colony forming units (CFU)	Week 5	Direct microscopic examination,	2	2
5.	Determination of Most probable number (MPN)	Week 6	Determination of Most probable number (MPN)	3	2
6.	Identification of specific group or species of microorganisms	Week 7,8	Identification of specific species of microorganisms	3	2
7.	Simple staining	Week 9,10	Staining techniques	4	4
8.	Gram staining, Negative staining,	Week 10,11	Differential staining	4	4
9.	Microbial examination of processed fruit and vegetable products	Week 12	Processing of fruits and vegetables	5	2
10	Microbial examination of canned foods.	Week 13	Microbial examination of canned foods	5	2
11	Visit to Laboratory	Week 14	Visit to Laboratory	5	2
12	Food industry lab visit and report Writing	Week 15	Food industry lab visit and report Writing	5	2

Learning resources**Textbooks:**

- 1) Frazier William C and Westhoff, Dennis C. Food Microbiology, TMH, New Delhi, 2004
- 2) Jay, James M. Modern Food Microbiology, CBS Publication, New Delhi, 2000
- 3) Garbutt, John. Essentials of Food Microbiology, Arnold, London, 1997

Reference Books:

3. Indian Standards: Food Hygiene-Microbiological Criteria-Principles for Establishment and Application
4. Fssai: Manual of methods of analysis of foods- food safety and standards authority of India, Ministry of health and family welfare, Government of India, New Delhi, 2015



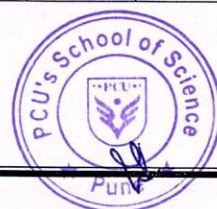
COURSE CURRICULUM

Name of the Program:		BSc Nutrition and Dietetics			Semester :4		Level: UG	
Course Name		Diet and Immunity			Course Code		UBSND 217	
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	
02		00	02	04	40	60		
Pre-Requisite: XII th Science and Fundamentals of Human Nutrition								
Course Objectives (CO):			The objective of Diet Immunity are: 1. To recall the basic functions of the immune system and its components. 2. To describe how different nutrients impact specific aspects of immune response, such as antibody production and inflammation. 3. To utilize evidence-based guidelines to recommend dietary modifications for individuals with compromised immune systems or chronic illnesses. 4. To assess the role of various nutrients in Immunity evaluate the impact of lifestyle factors on Immunoglobulins and its type. 5. To design, formulate and develop the diet plan in order to strengthen the Immunity.					
Course Learning Outcomes (CLO):			Students would be able to: 1. Understanding the basic functions of Immune system. 2. Develop strategies for maintaining optimal nutrition and healthy lifestyle habits to improve Immunity. 3. Design dietary plans that meet the unique nutritional requirements of in Immunity disorders. 4. Develop Create educational materials (e.g., brochures, presentations) that communicate evidence-based dietary recommendations for enhancing immune health to diverse audiences 5: Develop personalized nutrition plans tailored to specific populations according to their Immune systems and requirements.					

Course Contents/Syllabus:

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

Descriptors/Topics	CLO	Hours
UNIT I		
Introduction to Formed Elements of Blood Understanding Blood and Plasma ,Role of RBC'S, WBC's, Platelets and Plasma Proteins, Different Blood Groups and their origin, Rh factor, Blood Group Incompatibility Diet , Immunity and Blood Groups	CLO 1	6
UNIT II		



Immunity Definition of Immunity, Physiology of Immune system, Types of Immunity, Various Immunity Organs and their role in Immunity	CLO 2	6
UNIT III		
Immunoglobulins Definition and Meaning of Immunoglobulins, Five primary classes of immunoglobulins -IgG, IgM, IgA, IgD, and IgE., Functions of Immunoglobulins, Sources of Immunoglobulins, Disorders related to Low Immunoglobulins levels.	CLO 3	6
UNIT IV		
Disorders of Immune System Lupus, Diabetes Type 1, Celiac Disease, AIDS/HIV, Cancer, Rheumatoid Arthritis Grave's Disease, Pernicious Anaemia	CLO 4	6
UNIT V		
Role of Nutrients in Immunity Vitamin C, Vitamin D, Zinc, Selenium, Iron, Proteins, Glutamine	CLO 5	6
Total Hours		30

Learning resources

1. Build your immunity for life : diet and lifestyle choices to protect against infection, Author: Roderick Mulgan Publisher: Calico, Auckland, New Zealand, 2023
2. Stress Diet and Immunity: Author:Banka, Raksha



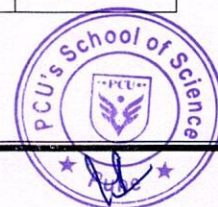
COURSE CURRICULUM

Name of the Program:		B.Tech/B.B.A/B.C. A/B.Sc/B.Pharm		Semester : 3/4		Level: UG	
Course Name		Constitution of India		Course Code/ Course Type		ACCOI201/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	0	0	0	2	50	-	-
Pre-Requisite:							
Course Objectives (CO):				The objectives of Constitution of India are: 6. To familiarize the students with the key elements of the Indian constitution. 7. To enable students to grasp the constitutional provisions and values. 8. To acquaint the students with the powers and functions of various constitutional offices and institutions. 9. To make students understand the basic premises of Indian politics. 10. To make students understand the role of constitution and citizen oriented measures in a democracy			
Course Learning Outcomes (CLO):				Students would be able to: 1. Analyze the basic structure of Indian Constitution. 2. Remember their Fundamental Rights, DPSP's and Fundamental Duties (FD's) of our constitution. 3. know about our Union Government, political structure & codes, procedures. 4. Understand our State Executive & Elections system of India. 5. Access the Amendments and Emergency Provisions, other important provisions given by the constitution			

Course Contents/Syllabus:

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

Descriptors/Topics	CLO	Hours
UNIT I		
Introduction to Indian Constitution:	CLO 1	8



The Necessity of the Constitution, The Societies before and after the Constitution adoption. Introduction to the Indian constitution, The Making of the Constitution, The Role of the Constituent Assembly. The Preamble of Indian Constitution & Key concepts of the Preamble. Salient features of India Constitution.		
UNIT II		
FR's, FD's and DPSP's: Fundamental Rights and its Restriction and limitations in different Complex Situations. Directive Principles of State Policy (DPSP) and its present relevance in our society with examples. Fundamental Duties and its Scope and significance in Nation building	CLO 2	5
UNIT III		
Governance and Constitution: Federalism in India - Features , Local Government -Panchayats – Powers and functions; 73rd and 74th amendments, Election Commission – Composition, Powers and Functions; Electoral Reforms, Citizen oriented measures – RTI and PIL – Provisions and significance..	CLO 3	5
UNIT IV		
Union Executive: Parliamentary System, Union Executive – President, Prime Minister, Union Cabinet, Parliament - LS and RS, Parliamentary Committees, Important Parliamentary Terminologies. Supreme Court of India, Judicial Reviews and Judicial Activism.	CLO 4	5
UNIT V		
State Executive & Elections, Amendments and Emergency Provisions: State Executive, Election Commission, Elections & Electoral Process. Amendment to Constitution (How and Why) and Important Constitutional Amendments till today. Emergency Provisions.	CLO 5	7
Total Hours		30

Learning resources

Text Books

1. "Constitution of India" (for Competitive Exams) - Published by Naidhruva Edutech
a. Learning Solutions, Bengaluru. – 2022.
2. "Engineering Ethics", M.Govindarajan, S.Natarajan, V.S.Senthilkumar, Prentice – Hall, 2004

Reference Books:

1. "SamvidhanaOdu" - for Students & Youths by Justice HN NagamohanDhas, Sahayana, kerekon.



2. "Constitution of India, Professional Ethics and Human Rights" by Shubham Singles, Charles E. Haries, and et al: published by Cengage Learning India, Latest Edition – 2019.
3. "Introduction to the Constitution of India", (Students Edition.) by Durga Das Basu (DD Basu):Prentice –Hall, 2008.
4. "The Constitution of India" by Merunandan K B: published by Merugu Publication, Second Edition, Bengaluru.

CIA Guidelines

CIA Guidelines

Online Quiz (Based on MCQ)- 20 marks

Activity (with short Report Submission) - 20 Marks

Academic Sincerity - 10 marks

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

Few of suggested topics related to **Constitution of India** are:

Debate Topics

- Rights and duties
- Base of Reservation and need

Assignment

- Characteristics of Constitution
- Working of Constitution



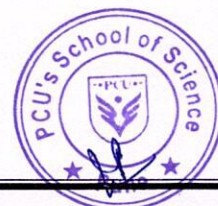
SEMESTER - V

COURSE STRUCTURE

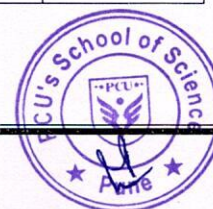


BSc. Nutrition & Dietetics

Name of the Program:		BSc Nutrition and Dietetics		Semester: 5		Level: UG	
Course Name		Basics of Critical Care and Illness		Course Code/ Course Type		UBSND 301/MAJM	
Course Pattern		2025		Version		1.1	
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: 10+2 Science, Nutrition and metabolism							
Course Objectives (CO):				The objectives of Nutrition in Critical Care are: 1. Understand the fundamentals of metabolism and physiological changes in critically ill patients. 2. Evaluate nutritional assessment methods for critically ill patients. 3. Develop enteral and parenteral nutrition plans based on clinical guidelines. 4. Analyze the role of macronutrients and micronutrients in critical care settings. 5. Integrate patient-centered approaches and collaborative decision-making in nutrition care for critically ill patients with multi-organ failure and complex conditions.			
Course Learning Outcomes (CLO):				Students would be able to: 1. Describe metabolic and physiological alterations occurring in critically ill patients. 2. Assess the nutritional status of critically ill patients using appropriate tools and techniques. 3. Formulate enteral and parenteral nutrition strategies following evidence-based clinical practice guidelines. 4. Examine the function and requirements of macronutrients and micronutrients in critically ill patients. 5. Apply patient-centered care principles and inter professional collaboration in nutrition planning for complex clinical cases.			



Descriptors/Topics	CLO	Hours
UNIT I		
Unit 1: Introduction to Critical Care Nutrition (9 hrs) • Definition and importance of critical care nutrition • Metabolic and physiological changes in critically ill patients • Nutritional needs in different critical care conditions • Pathophysiology of hypermetabolism, catabolism, and inflammation • Energy and fluid balance in critically ill patients • Introduction to enteral and parenteral nutrition • Overview of evidence-based nutrition guidelines (ASPEN, ESPEN) • Role of dietitians and multidisciplinary teams in ICU nutrition • Importance of early nutritional intervention in critical care	CLO 1	9
UNIT II		
Unit 2: Nutritional Assessment and Monitoring in Critical Care (9 hrs) • Methods of nutritional screening and assessment in critically ill patients • Anthropometric, biochemical, and clinical parameters in nutrition assessment • Indirect calorimetry and predictive equations for energy requirements • Gastrointestinal function and its impact on nutrition support • Laboratory parameters for assessing nutritional status (albumin, prealbumin, CRP) • Identification and management of refeeding syndrome • Fluid and electrolyte balance in critically ill patients • Functional assessment methods (e.g., handgrip strength, nitrogen balance) • Continuous monitoring and adjustments in critical care nutrition	CLO 2	9
UNIT III		
Unit 3: Enteral and Parenteral Nutrition in Critical Care (9 hrs) • Indications, types, and formulations of enteral nutrition (EN) • Feeding routes: Nasogastric, nasojejunal, and percutaneous enteral feeding • Indications, formulations, and complications of total parenteral nutrition (TPN) • Differences between enteral and parenteral nutrition support • Guidelines for selecting enteral vs. parenteral nutrition in ICU patients • Complications of EN and PN (e.g., aspiration, infection, hyperglycemia) • Development of individualized EN and PN regimens	CLO3	9



• Transitioning from parenteral to enteral nutrition • Advances in enteral and parenteral feeding techniques		
UNIT IV		
Unit 4: Macronutrients and Micronutrients in Critical Illness (9 hrs) • Role of carbohydrates, proteins, and fats in critical care nutrition • Protein requirements and metabolism in critically ill patients • Specialized lipid emulsions and their impact on inflammation • Glycemic control and carbohydrate metabolism in ICU settings • Importance of vitamins and minerals in critically ill patients • Immunonutrition: Role of glutamine, arginine, and omega-3 fatty acids • Electrolyte management (sodium, potassium, calcium, phosphorus) • Nutrient deficiencies and their impact on recovery in ICU patients • Personalized nutrition therapy based on metabolic status	CLO4	9
UNIT V		
Unit 5: Ethical, Practical, and Emerging Trends in Critical Care Nutrition (9 hrs) • Ethical considerations in artificial nutrition support, including consent and patient autonomy • Developing a Nutrition Care Process in an ICU Setting • Managing nutrition in end-stage renal disease (ESRD): Dialysis and nutritional interventions • Nutritional challenges in acute pancreatitis: Feeding strategies and management • Nutrition in trauma and burn patients: Hypermetabolism, protein catabolism, and energy requirements • Role of probiotics and prebiotics in gut health during critical illness, particularly in sepsis • Managing nutrition in critical respiratory conditions (e.g., ARDS, COPD) and the impact on metabolism • Advances in precision nutrition and the role of nutrigenomics in ICU settings • Case-based discussions on complex conditions such as severe sepsis, traumatic brain injury, and multi-organ failure • The impact of artificial intelligence and technology (e.g., predictive models, automated feeding systems) in optimizing ICU nutrition	CLO5	9
Total Hours		45



Name of the Program:		BSc Nutrition and Dietetics		Semester: 5		Level: UG	
Course Name		Clinical and Therapeutic Nutrition		Course Code/ Course Type		UBSND 302/MAJM	
Course Pattern		2025		Version		1.1	
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: 10+2 Science, Nutrition and metabolism							
Course Objectives (CO):					The objectives of Clinical and Therapeutic diet are: 1. To understand the role of nutrition in wound healing and to identify dietary strategies for managing nutritional needs in critical care and disease-specific conditions. 2. To understand the impact of nutrition on hormonal balance and metabolic health and to evaluate the role of lifestyle modifications in conjunction with dietary management. 3. To understand the role of diet in the prevention and management of gastrointestinal (GI) diseases and to develop tailored nutritional plans for improving quality of life in GI disorders. 4. To understand the role of nutrition in liver and pancreatic health and to explore dietary strategies for managing liver and pancreatic diseases. 5. To understand the role of diet in kidney function and disease management and to identify dietary strategies for managing different kidney diseases and their complications.		
Course Learning Outcomes (CLO):					Students would be able to: 1. Understand the role of nutrition in wound healing and immune function and explain the importance of preoperative and postoperative nutrition in patient recovery.		



2. Understand the impact of nutrition on hormonal balance and metabolic health and explain the role of diet in managing PCOD, PCOS, thyroid disorders, and Hodgkin's disease.

3. Understand the role of Diet in Gastrointestinal Diseases and explain how diet influences the pathophysiology and management of common gastrointestinal disorders.

4. Understand the role of nutrition in liver and pancreatic health and explain the dietary modifications required for managing liver and pancreatic diseases.

5. Understand the role of nutrition in kidney function and disease management and explain the dietary modifications required for different kidney diseases.



Descriptors/Topics	CLO	Hours
UNIT I		
Nutrition and wound healing- pre and post operative nutrition and its dietary management, nutrition support in burn patients, critical care patients, AIDS, HIV, typhoid, tuberculosis, covid and cancer and its dietary management	CLO 1	9
UNIT II		
PCOD, PCOs, Thyroid (Hypothyroidism and hyperthyroidism) Hodgkins's disease, and its dietary management	CLO 2	9
UNIT III		
Diet in gastrointestinal diseases- diet in gastro esophageal reflux disease (GERD), dietary management in peptic ulcer, dumping syndrome, IBS, Crohn's disease, and ulcerative colitis	CLO3	9
UNIT IV		
Diet in disease in liver and pancreas- dietary management in jaundice, Nonalcoholic fatty liver (NAFL), infective hepatitis, liver cirrhosis and cholecystitis, cholelithiasis and Pancreatitis and its dietary management.	CLO4	9
UNIT V		
Diet in disease in kidney- nephrotic syndrome, acute kidney failure, chronic kidney disease, urinary calculi (urolithiasis), dietary management in dialysis	CLO5	9
Total Hours		45

References:

1. B Srilaxmi, Dietetics,
2. Nutrition and Dietetics (with Indian Case Studies) Shubhangini A Joshi, Mc Graw Hill.
3. Food & the Nutrition Care Process, Krause and Mahan, 16th Edition
4. <https://egyankosh.ac.in/handle/123456789/32940>



Course Curriculum

Name of the Program:		BSc ND		Semester: 4		Level: UG	
Course Name		Clinical and Therapeutic Nutrition lab		Course Code/ Course Type		UBSND 303/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 Clinical and Therapeutic Nutrition lab are: 1. Understand the role of macronutrients and micronutrients in TB, Cancer and covid management and recovery. 2. Learn the importance of macronutrient balance (carbohydrates, proteins, and fats) in PCOD, Hypo and hyperthyroidism management. 3. Learn the essential macronutrients and micronutrients needed for ulcer healing, IBS, ulcerative colitis, and gastrointestinal health. 4. Develop low-sodium, high-fibre, and easily digestible meal plans suitable for cirrhosis, jaundice, and pancreatitis patients. 5. Understand sodium and fluid management to control oedema and hypertension and recognize essential micronutrients like vitamin D, calcium, and iron for kidney health.			
Course Learning Outcomes (CLO):				Students would be able to: 1. Analyze the impact of specific macronutrients and micronutrients on immune function and disease progression. 2. Demonstrate an understanding of the role and significance of balanced macronutrient intake—carbohydrates, proteins, and fats—in the dietary management of hormonal disorders such as Polycystic Ovarian Disease (PCOD), hypothyroidism, and hyperthyroidism. 3. Identify and explain the essential macronutrients and micronutrients that support healing and symptom management in gastrointestinal conditions such as peptic ulcers, irritable bowel syndrome (IBS), ulcerative colitis, and general digestive health.			



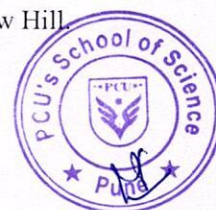
	4. Design and develop therapeutic meal plans that are low in sodium, high in fibre, and easily digestible, tailored to meet the nutritional needs of patients with liver and pancreatic conditions such as cirrhosis, jaundice, and pancreatitis. 5. Demonstrate understanding of sodium and fluid management strategies to control oedema and hypertension, and identify the role of essential micronutrients such as vitamin D, calcium, and iron in maintaining optimal kidney health.
--	---

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 Diet for Tuberculosis Patient	CLO1	4
2	Practical 2:	Week 2	Calculation and Preparation of Diet for Cancer Patient.	CLO1	4
3.	Practical 3:	Week 3	Calculation and Preparation of Diet for PCOD Patients	CLO2	2
4	Practical 4:	Week 4	Calculation and Preparation of Diet for Peptic Ulcer patients	CLO3	4
5	Practical 5:	Week 5	Calculation and Preparation of Diet for Ulcerative Colitis patients	CLO 3	4
6	Practical 6:	Week 6	Calculation and Preparation of diet for liver Cirrhosis Patient.	CLO4	4
7	Practical 7:	Week 7	Calculation and Preparation of diet for liver Jaundice Patient.	CLO4	2
8	Practical 8:	Week 8	Calculation and Preparation of diet for Pancreatitis Patient.	CLO4	2
9	Practical 9:	Week 9	Calculation and Preparation of Diet for Nephrotic Syndromes	CLO 5	2
10	Practical 10:	Week 10	Calculation and Preparation of Diet for Chronic Kidney failure.	CLO 5	2
			Total Hours		30

References:

5. B Srilaxmi, Dietetics,
6. Nutrition and Dietetics (with Indian Case Studies) Shubhangini A Joshi, Mc Graw Hill
7. Food & the Nutrition Care Process, Krause and Mahan, 16th Edition
8. <https://egyankosh.ac.in/handle/123456789/32940>

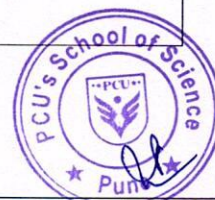


COURSE CURRICULUM

Course Contents/Syllabus:

Name of the Program:		BSc Nutrition and Dietetics		Semester : 5 th		Level: UG	
Course Name		Functional Foods and Nutraceuticals		Course Code/ Course Type		UBSND 304/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:							
Course Objectives (CO):				The objectives of Functional foods and nutraceuticals are: 1. To understand the basic concept of Functional Foods, Nutraceuticals and their significance 2. To remember the basic classification of Functional foods according to various criteria. 3. To comprehend the steps and guidelines for development of Functional Food and nutraceutical. 4. To corelate various sources of Functional Foods and their health benefits in diseases and Sports. 5. To recall few sources used in day to day life and understand the role of their bioactive compounds in improving health.			
Course Learning Outcomes (CLO):				Students would be able to: 1. Students will be able to identify key theories and concepts related to the mind/body relationship and the physiological basis of psychological phenomena, including terminology and historical perspectives. 2. Explain the various theories that attempt to explain the relationship between psychological processes and somatic adaptive responses, and articulate the ways in which physiological functions influence behavior and cognition. 3. Apply knowledge of physiological psychology to analyze and interpret real-world examples of how observable physiological functions, such as neural activity and hormonal responses, contribute to psychological behavior and mental processes in humans. 4. Analyze the underlying physiological mechanism that influence behavior and mental processes.			

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



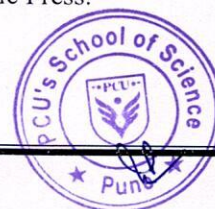
Descriptors/Topics	CLO	Hours
UNIT I		
History and Understanding Functional foods and Nutraceuticals: Definition of Functional foods, Need and Importance of Functional foods, Dietary Supplements, Various types of functional foods as per FSSAI standards-Nutraceuticals, Novel foods, Designer Foods, Medical Foods, Health Benefits of Functional foods in various Diseases	1	9
UNIT II		
Classification of Functional Foods: Classification according to -Food Source, Nutrient and Non-Nutrient Source, Organ/Organ System, Modifications in foods, Specific Foods, Mechanism of actions and Chemical Nature	2	9
UNIT III		
Guidelines for Development and safety Assessment of Nutraceuticals: Critical steps in the development of Nutraceutical incorporated products as per FSSAI standards, understanding safety measures- Concept of safety factor involved in developing the Nutraceutical in Physical and Chemical form, Microencapsulation, Vacuum Impregnation, Food Vehicle to develop Nutraceutical	3	9
UNIT IV		
Health Benefits of Functional foods in various Diseases and Sports: Role of various Functional Foods in Diabetes, CVD's, PCODs, Liver Health and Sports Nutrition	4	9
UNIT V		
Importance and health benefits of various Functional foods- Different teas (Matcha, Green, Blue, Hibiscus tea, Chamomile), Caffeine, phospholipids, CLA and GLA, Polyphenols	5	9
Total Hours		45

Textbooks:

1. **Wildman, R.E.C.** (Ed.). (2016). *Handbook of Nutraceuticals and Functional Foods* (2nd ed.). CRC Press.
2. **Gibson, G.R., & Williams, C.M.** (2000). *Functional Foods: Concept to Product*. Woodhead Publishing.
3. **Shahidi, F.** (2009). *Functional Foods of the East*. CRC Press.
4. **Bagchi, D.** (2015). *Nutraceutical and Functional Food Regulations in the United States and Around the World* (2nd ed.). Academic Press.

Reference Books:

1. **Gupta, R.C.** (Ed.). (2016). *Nutraceuticals: Efficacy, Safety and Toxicity*. Academic Press.



2. **Shahidi, F., & Ambigaipalan, P.** (2015). *Nutraceuticals and Functional Foods: Sources of Health-Promoting Compounds and Their Applications*. Wiley-Blackwell.
3. **Martirosyan, D.M.** (Ed.). (2020). *Functional Foods: Bioactive Compounds and Biomarkers*. Functional Food Center.
4. **Jones, P.J.** (Ed.). (2002). *Functional Foods: Clinical Trials, Health Claims and Evidence-Based Nutritional Practice*. Woodhead Publishing.

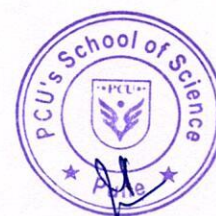
Online/E-Learning Resources:

1. **National Center for Biotechnology Information (NCBI):**
<https://www.ncbi.nlm.nih.gov>
 – Research papers and reviews on functional foods and nutraceuticals.
2. **ScienceDirect:**
<https://www.sciencedirect.com>
 – Journals like *Journal of Functional Foods*, *Food Research International*, etc.
3. **PubMed:**
<https://pubmed.ncbi.nlm.nih.gov>
 – Access peer-reviewed articles on nutraceuticals and related health outcomes.
4. **Coursera / edX Courses:**
 - *Nutrition and Lifestyle in Pregnancy* – Ludwig Maximilian University of Munich (Coursera)
 - *Nutrition, Exercise and Sports* – Wageningen University (edX)
 (Look for courses related to functional foods, diet, and health)
5. **Academy of Nutrition and Dietetics:**
<https://www.eatright.org>
 – Position papers and continuing education resources on food and nutrition science.



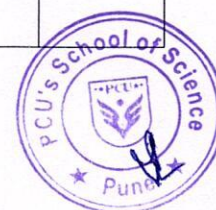
Course Curriculum

Name of the Program:		B.Sc Nutrition and Dietetics		Semester : 5		Level: UG	
Course Name		Food Service Management Systems		Course Code/ Course Type		UBSND 305	
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: 12 th Science Pass							
Course Objectives (CO):				The objectives of Food Service Management Systems are: 1. To Understand the Fundamentals of Food Service Management 2. To Analyze Food Service Operations 3. To Understand the Food Management systems 4. To Apply Principles of Menu Planning and Cost Control 5. To Understand the Principles of Resource Management			
Course Learning Outcomes (CLO):				Students would be able to: 1. Define and differentiate various types of food service systems 2. Demonstrate knowledge of kitchen layout, workflow, and equipment selection. 3. Apply cost control techniques, including portion control, standardization, and food cost calculation. 4. Analyze financial statements and budgets for food service establishments. 5. Use modern technology (e.g., POS systems, kitchen display systems) in food service management and evaluate sustainable practices, such as waste reduction, energy conservation, and ethical sourcing.			



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

Descriptors/Topics	CLO	Hours
UNIT I		
Introduction to Food Service Systems: • Types of food service systems. • Approaches to management. • Principles and tools of management. • Management of resources. • Types of catering - history of development - commercial - Hotel, Motel, Restaurant, Cafeteria and Chain hotels • Welfare - Hospital, School lunch, Residential establishment and Industrial catering. Transport - Air, Rail, Sea and Space, Miscellaneous - Contract and outdoor.	CLO 1	8
UNIT II		
Kitchen and Service Area Planning: • Layout design and space allocation for kitchen, storage, and service areas. • Considerations for lighting, ventilation, and equipment placement.	CLO 2	5
UNIT III		
Food Management: • Characteristics of foods and nutritional knowledge. • Food purchasing and inventory management. • Menu planning principles and types of menus. • Food production and service methods. • Waste management strategies.	CLO 3	5
UNIT IV		
QUANTITY FOOD PURCHASE Standards for selection of fresh food. substitutes in the form of convenience or ready prepared food purchase and storage. Quantity food preparation: Menu planning - Indian and Western - standardization and standardized recipes portion control.	CLO 4	5
UNIT V		
PRINCIPLES OF RESOURCE MANAGEMENT Definition, Management Process - planning, controlling evaluating goals, values and standards. Decision making: concepts, types of decisions, steps in decision making, methods of resolving conflicts. Resource Management - Classification, characteristics, factors affecting the use of resources. Management of time, energy and money - Time management - Time	CLO 5	7



norms, plans and time management. Cost control, food cost, labor overheads and projects.		
The computer in catering: Use of computer for the control of stock, recipes and menus.		
Total Hours		30

Textbooks:

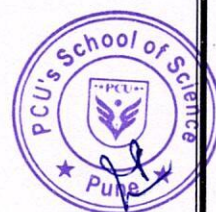
1. **Payne-Palacio, J., & Theis, M.** (2015). *Foodservice Management: Principles and Practices* (13th ed.). Pearson.
2. **Knight, J.B., & Kotschevar, L.H.** (2000). *Quantity Food Production, Planning, and Management* (3rd ed.). Wiley.
3. **Anderson, L., & Young, A.** (2008). *Managing Food Service Operations: A Systems Approach* (2nd ed.). Prentice Hall.
4. **Kinton, R., Ceserani, V., & Foskett, D.** (2008). *The Theory of Catering* (11th ed.). Hodder Education.

Reference Books:

1. **Gregoire, M.** (2016). *Foodservice Organizations: A Managerial and Systems Approach* (9th ed.). Pearson.
2. **Drummond, K.E., & Brefere, L.M.** (2010). *Nutrition for Foodservice and Culinary Professionals* (7th ed.). Wiley.
3. **Puckett, R.P.** (2004). *Foodservice Manual for Health Care Institutions* (3rd ed.). Jossey-Bass.
4. **Spears, M.C.** (2000). *Foodservice Organization: A Managerial and Systems Approach*. Prentice Hall.

Online/E-Learning Resources:

1. **National Restaurant Association Educational Foundation (NRAEF):**
<https://chooserestaurants.org>
– Industry reports, trends, and training modules for food service professionals.
2. **Coursera – Hospitality & Food Service Courses:**
<https://www.coursera.org>
– Courses from top universities like Cornell on hospitality, food management, and service operations.
3. **edX – Food Service Management & Sustainability:**
<https://www.edx.org>
– Explore courses on restaurant management, supply chain, and food systems.
4. **YouTube – Food Service Operations Channels:**
 - o National Restaurant Association
 - o Sysco Corporation
 - o Culinary Institute of America (CIA)
5. **ResearchGate & Academia.edu:**
– Access to research papers, project reports, and case studies on food service operations.
6. **USDA – Food and Nutrition Service (FNS):**
<https://www.fns.usda.gov>
– Guidelines for institutional food services, particularly in healthcare and education.



Course Curriculum

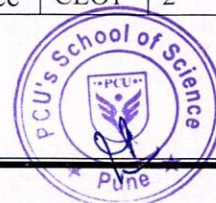
Name of the Program:		BSc ND		Semester : 5		Level: UG	
Course Name		Food Service Management Systems - Lab		Course Code/ Course Type		UBSND 306	
Course Pattern		2024		Version		1.0	
Teaching Scheme				Assessment Scheme			
Theory	Practical	Tutorial	Total Credits	Hours	CIA(Continuous Internal Assessment)	ESA (End Semester Assessment)	Practical/ Oral
	2		2	4	50	-	50
Pre-Requisite:							
Course Objectives (CO):			The objectives of Food Service Management are: 6. To develop an understanding of the basic principles of food service operations, including menu planning, purchasing, storage, and cost control. 7. Demonstrate proficiency in using various equipment and tools commonly used in food service settings. 8. To understand Cost Control and Budgeting in Food Service 9. To understand and analyze the importance of time and resource management in food service operations. 10. To develop communication and leadership skills to efficiently manage staff, customer service, and resolve challenges in a food service environment.				
Course Learning Outcomes (CLO):			Students would be able to: 6. Identify and apply appropriate food service management techniques in different types of food establishments. 7. Operate and maintain food service equipment safely and efficiently. 8. Apply effective time management and organizational skills to streamline food service operations. 9. Analyze and execute various styles of food service, adapting operations to meet customer demands and service quality. 10. Display effective leadership, teamwork, and problem-solving skills in managing food service operations.a				

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	- Understanding different types of food service establishments - Organization structure and workflow in food service units Identification and use of commercial kitchen equipment	CLO1	2
2	Practical 2:	Week 2	Cost Control and Budgeting in Food Service	CLO1	2



			- Costing methods and financial record-keeping - Strategies for reducing food waste and cost optimization		
3.	Practical 3:	Week 3	Preparation of meals for different food service settings (hospitals, cafeterias, restaurants)	CLO1	2
4	Practical 4:	Week 4	Service Styles and Customer Service Management Table setting and service styles (buffet, à la carte, cafeteria)	CLO 1	2
5	Practical 5:	Week 5	Menu Planning and Standardization: Preparing a planning prospect for setting up of food service unit.	CLO 2	2
6	Practical 6:	Week 6	menu planning for different target groups Recipe standardization and portion control and Calculation of food cost and pricing strategies	CLO 2	4
7	Practical 7:	Week 7	Quantity Cooking and Production Techniques - Bulk cooking methods (boiling, baking, steaming, frying) - Standardization of recipes for large-scale production	CLO1/ 2	2
8	Practical 8:	Week 8	Planning and organizing a mid day snack for preschool children.	CLO 2	2
9	Practical 9:	Week 9	Planning and organizing meals for college canteen.	CLO 2	2
10	Practical 10:	Week 10	Planning and organizing meals for college hostel mess.	CLO 3	2
11	Practical 11:	Week 11	Planning and organizing meals for working women hostel.	CLO4	2
12	Practical 12:	Week 12	Planning and organizing meals for Industrial canteen.	CLO4	2
13	Practical 13:	Week 13	Planning and organizing meals for different occasion(birthday, cocktail party, conferences etc)	CLO 5	2
14	Practical 14:	Week 14	Visit to food service operations	CLO 5	2
15	Practical 15	Week 15	Analysis of food service operations in an institutional setup	CLO 5	2
			Total Hours		30

Text book:

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

BSc. Nutrition & Dietetics



2. Human Nutrition and Dietetics –Davidson S. Passmore
3. Normal and Therapeutic Nutrition- Corinne. H.Robinson & Marilyn Lawler

Reference books:

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

Online Resources/E-Learning resources

1. **National Restaurant Association Educational Foundation (NRAEF):**
<https://chooserestaurants.org>
– Industry reports, trends, and training modules for food service professionals.
2. **Coursera – Hospitality & Food Service Courses:**
<https://www.coursera.org>
– Courses from top universities like Cornell on hospitality, food management, and service operations.
3. **edX – Food Service Management & Sustainability:**
<https://www.edx.org>
– Explore courses on restaurant management, supply chain, and food systems.
4. **YouTube – Food Service Operations Channels:**
 - *National Restaurant Association*
 - *Sysco Corporation*
 - *Culinary Institute of America (CIA)*

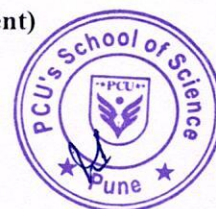


Course Curriculum

Course Contents/Syllabus:

Name of the Program:		B.Sc Nutrition and dietetics		Semester : V		Level: UG	
Course Name		Introduction to Food Quality Control Methods		Course Code/ Course Type		UBSND 307	
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	40	60	-
Pre-Requisite: 12 th Science Pass							
Course Objectives (CO):				The objectives of Introduction to Food Quality Control Methods are: 1. Provide a fundamental understanding of food quality, its attributes, and its significance in nutrition and health. 2. Introduce students to food quality assessment methods and standards like GMP and GHP. 3. Explain the principles of HACCP and TQM in food quality control. 4. Develop skills to analyze Food adulteration aspects of food quality. 5. Familiarize students Food Packaging, Labelling, and Consumer Protection			
Course Learning Outcomes (CLO):				Students would be able to : 1. Define and explain food quality parameters and their impact on consumer health. 2. Evaluate food quality using instrumental methods. 3. Apply quality control techniques to ensure food safety and hygiene 4. Understand food adulteration, contamination, and methods of detection. 5. Interpret food safety laws and regulatory frameworks like FSSAI, HACCP, ISO, and Codex Alimentarius and Analyze food labelling, packaging, and marketing claims in relation to quality standards.			

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



Descriptors/Topics	CLO	Hours
UNIT I		
Definition, types of hazard-physical, chemical and biological, factors affecting Food Safety. Quality Control Concepts as applied to the food industry. General Concepts of quality control and quality control Major quality control functions. Physical properties: colour, texture, viscosity, and moisture content. Chemical composition and nutritional quality assessment	CLO 1	8
UNIT II		
Good Manufacturing Practices (GMP), Good Hygienic Practices (GHP), Good Agricultural Practice(GAP), Storage and distribution of food, sanitation and safety in food services. Importance of personal hygiene of food handlers – clothes, illness. Education of food handler in handling and serving food, Safety in food procurement, storage, handling and preparation – control of spoilage –safety of left over foods. Cleaning and sanitization. Products and methods – use of detergents and chemicals.Food quality vs. food safety. National and international food quality standards (FSSAI, FDA, WHO, Codex Alimentarius)	CLO 2	7
UNIT III		
Hazard Analysis Critical Control Point (HACCP): History, structure, pre-requisites and principles, HACCP applications, HACCP based SOPs. ISO 22000 and Total Quality Management (TQM)	CLO 3	5
UNIT IV		
Food adulteration: common adulterants, simple tests for detection of adulteration. Food additives- classification, functional role and safety issues, types of adulteration and recent trends in food adulteration.	CLO 4	5
UNIT V		
Food Packaging, Labelling, and Consumer Protection: Role of packaging in food quality, Types of food packaging materials, Food labelling regulations and interpretation, Consumer awareness and protection against food fraud	CLO 5	5
Total Hours		30



Learning resources

Textbooks:

1. **Mehta, R., & George, S.** (2014). *Quality Control for Food Industry*. ASQ Quality Press.
2. **Singh, S.P.** (2009). *Quality Control and Management*. Standard Publishers.
3. **Fellows, P.J.** (2009). *Food Processing Technology: Principles and Practice* (3rd ed.). Woodhead Publishing.
4. **Pomeranz, Y., & Meloan, C.E.** (1994). *Food Analysis: Theory and Practice* (3rd ed.). Springer.

Reference Books:

1. **Kumar, D.** (2017). *Food Quality Assurance and Quality Management*. Agrotech Publishing Academy.
2. **Wallace, C.A., Sperber, W.H., & Mortimore, S.E.** (2018). *Food Safety for the 21st Century: Managing HACCP and Food Safety Throughout the Global Supply Chain* (2nd ed.). Wiley.
3. **Luning, P.A., Marcelis, W.J., & Jongen, W.M.F.** (2002). *Food Quality Management: A Technological and Managerial Principle*. Wageningen Academic Publishers.
4. **Clute, M.** (2008). *Food Industry Quality Control Systems*. CRC Press.

Online/E-Learning Resources:

1. **Food Safety and Standards Authority of India (FSSAI):**
<https://www.fssai.gov.in>
– Guidelines, manuals, food safety training, and compliance regulations.
2. **Codex Alimentarius – FAO/WHO:**
<https://www.fao.org/fao-who-codexalimentarius>
– International food standards, HACCP principles, and food safety systems.
3. **Coursera – Food Safety and Quality Courses:**
<https://www.coursera.org>
– Courses from Wageningen University, University of Copenhagen, etc.
4. **edX – Quality and Safety in Food Processing:**
<https://www.edx.org>
– Online modules related to QA/QC, ISO standards, and regulatory frameworks.
5. **European Food Safety Authority (EFSA):**
<https://www.efsa.europa.eu>
– Reports, scientific opinions, and food quality risk assessments.
6. **Institute for Food Safety at Cornell University (IFS@CU):**
<https://instituteforfoodsafety.cornell.edu>
– Training resources, webinars, and industry best practices.



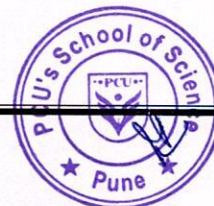
Name of the Program:		BSc CP		Semester : 4		Level: UG	
Course Name		PSY Minor4: Industrial Psychology		Course Code/ Course Type		USCPSY104	
Course Pattern		2024		Version		1.0	
Teaching Scheme				Assessment Scheme			
Theory	Practical	Tutorial	Total Credits	Hours	CIA (Continuous Internal Assessment)	ESA (End Semester Assessment)	Practical/ Oral
2	-	-	2	2	20	30	-
Pre-Requisite: FYBSc.							
Course Objectives (CO):				The objectives of Organisational psychology are: 16. To introduce the basic concepts and scope of industrial psychology. 17. To analyze employee behavior and performance in organizational settings. 18. To apply psychological principles to recruitment, training, and workplace motivation. 19. To evaluate workplace challenges related to stress, well-being, and job satisfaction. 20. To develop critical thinking skills for applying psychological interventions to improve organizational outcomes.			
Course Learning Outcomes (CLO):				Students would be able to: 11. Define industrial psychology and explain its scope. 12. Explain the causes and consequences of workplace stress. 13. Apply motivational theories to enhance employee performance. 14. Analyze different performance evaluation methods used in organizations. 15. Evaluate the impact of workplace diversity on employee relations.			

COURSE CURRICULUM

Course Contents/Syllabus:

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

Descriptors/Topics	CLO	Hours
UNIT I		
Introduction to Industrial Psychology: Definition and scope of industrial psychology, Historical development and relevance, Methods of research in industrial psychology, Scope and opportunities in the field, professional	CLO 1	06



skills for organizational psychologist		
UNIT II		
Personnel and Organizational Issues: Worker stress, Negative employee attitudes and behavior, Causes and Consequences of Workplace Stress Stress Management Strategies in Organizations , , Industrial Accidents and Safety Measures	CLO 2	06
UNIT III		
Work Motivation and Job Satisfaction: Work-Life Balance and Employee Well-being Programs ,Needs Hierarchy Theory, FRG Theory ,Motivation-Hygiene (Two Factor) Theory, Job Characteristics Theory	CLO 3	06
UNIT IV		
Assessing job performance and job satisfaction: performance evaluation - Downsizing, promotion, seniority, Appraisal rating and non-rating evaluation methods, Job satisfaction: Concept and theories	CLO 4	06
UNIT V		
Relationship at work : nature of work place relationship, affect and workplace, employee relations, discrimination , diversity, bullying and violence in the workplace	CLO 5	06
Total Hours		30

Learning resources

Textbooks:

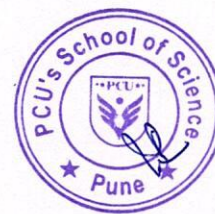
1. Riggio, R. E., & Johnson, S. K. (2022). Introduction to Industrial/Organizational Psychology (8th Ed.).
2. Jex, S. M., & Britt, T. W. (2008). Organizational Psychology: A Scientist-Practitioner Approach. John Wiley & Sons.

Reference Books:

1. Sinha, J.B.P. (2008) Culture & Organization Behaviour. New Delhi: Sage Texts
2. Robbins, S. (2001). Organization behaviour. (9th ed.). New Delhi :Prentice Hall of India.
3. Landy, F. J., & Conte, J. M. (2010). Work in the 21st Century: An Introduction to Industrial and Organizational Psychology. John Wiley & Sons.

Online Resources/E-Learning Resources:

1. <https://library.wbi.ac.id/repository/143.pdf>
2. https://youtu.be/rIPaK5ObMpM?si=eAGDonS79tQoC_CF
3. https://youtu.be/nX1gDP4_WmM?si=BiB183XZKd7FwZIO

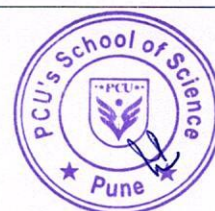


COURSE CURRICULUM

Name of the Program:		B. Sc. Nutrition and Dietetics		Semester: 5		Level: UG	
Course Name		Aptitude And Logical Reasoning		Course Code/ Course Type		ACALR301/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	0	0	0	2	50	-	-
Pre-Requisite:							
Course Objectives (CO):				The objectives of Aptitude and Logical Reasoning are: 1. To Familiarize Students with Different Types of Mathematical Problems. 2. To learn and Strengthen Logical Reasoning Skills. 3. To Develop Critical Thinking Skills. 4. To Improve Quantitative and Numerical Skills. 5. To Prepare Students for Standardized Tests and build Confidence in Problem-Solving.			
Course Learning Outcomes (CLO):				Students would be able to: 1. Students will develop enhanced problem-solving abilities through Exposure to various types of aptitude and logical reasoning problems. 2. Sharpen their analytical thinking skills by learning to analyze and interpret different types of data, patterns, and logical structures. 3. Cultivate critical thinking abilities by challenging students to evaluate and assess information, arguments, and scenarios using logical reasoning principles. 4. Apply different forms of logical reasoning, such as deductive reasoning, inductive reasoning, and critical reasoning, to solve problems and make decisions. 5. Students will be able to develop soft skills and communication skills			

Course Contents/Syllabus:

BSc. Nutrition & Dietetics



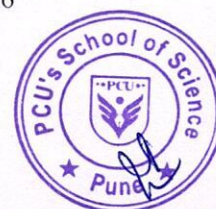
(All the units carry equal weightage in Summative Assessment and equal engagement)

Descriptors/Topics	CLO	Hours
UNIT I		
Quantitative Aptitude: Number System, Problems on Ages, Percentage, Average, Time and Work, Profit and Loss, Permutation and Combination	CLO 1	8
UNIT II		
Logical Reasoning: Number Series, Letter Series, Coding and Decoding, Calendars, Clocks	CLO 2	8
UNIT III		
Verbal Reasoning: Subject-Verb Agreement, Preposition and Verbal Analogy, Closet test	CLO2,3	7
UNIT IV		
Personality Development: Resilience, Motivation and Listening skills, Self-confidence, Body language, Leadership, Goal setting, Emotional intelligence, Personal growth and development	CLO 3	7
UNIT V		
Soft Skills and Communication Skills: Introduction to Teamwork, Collaboration and Time Management, Communication Skills, Organization Skills, Introduction to Critical Thinking, Leadership, Negotiation and Presentation Skills, Time Management, Adaptability Skills, Actively listening in conversations, Public speaking, Effectively communicating ideas to others, Introduction to Career Development, Goal Setting, Emotional Intelligence Fundamentals, Building Adaptability and Resilience	CLO2,3	8
Total Hours		30

Learning resources

Textbooks:

1. Quantitative Aptitude for Competitive Examinations, R.S Agarwal, 2017
2. Quantitative Aptitude for All Competitive Examinations by Abhijit Guha, 6th edition, 2016
3. Word Power Made Easy by Norman Lewis, 2023



Reference Books:

The Pearson Guide to Quantitative Aptitude for Competitive Examinations by Dinesh khattar, 2nd Edition

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.

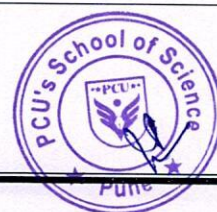


COURSE CURRICULUM

Name of the Program:		B. Sc. Nutrition and Dietetics		Semester: 5		Level: UG	
Course Name		Dietary Management in Eating Disorders		Course Code/ Course Type		UBSND 308 B	
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	0	0	0	2	50	-	-
Pre-Requisite:							
Course Objectives (CO):				The objectives of Dietary Management in Eating Disorders are 1. Explain the classification, symptoms, and psychological aspects of common eating disorders. 2. Assess the nutritional status and dietary patterns of individuals with eating disorders. 3. Design individualized nutrition care plans for patients with different types of eating disorders. 4. Evaluate the role of macronutrients, micronutrients, and refeeding protocols in treatment. 5. Apply ethical, patient-centered, and interdisciplinary approaches in the management of eating disorders.			
Course Learning Outcomes (CLO):				Students would be able to: 1. Describe different types of eating disorders, their causes, and physiological/psychological consequences. 2. Perform nutritional assessments for individuals with eating disorders using anthropometric and dietary methods. 3. Develop dietary interventions and care plans based on clinical needs and nutritional goals. 4. Analyze the nutritional implications and metabolic challenges during refeeding and long-term treatment. 5. Demonstrate the ability to integrate ethical and collaborative practices in managing complex eating disorder cases.			

Course Contents/Syllabus:

BSc. Nutrition & Dietetics



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

Descriptors/Topics	CLO	Hours
UNIT I		
Unit I: Introduction to Eating Disorders - Definition and classification of eating disorders (DSM-5) - Epidemiology and etiology: biological, psychological, and sociocultural factors - Common types of eating disorders: - Anorexia Nervosa - Bulimia Nervosa - Binge Eating Disorder - Avoidant/Restrictive Food Intake Disorder (ARFID) - Signs, symptoms, and diagnostic criteria - Impact on physical and mental health	CLO 1	8
UNIT II		
Unit II: Nutritional Consequences of Eating Disorders - Malnutrition and nutrient deficiencies - Effects on gastrointestinal, cardiovascular, endocrine, and skeletal systems - Laboratory markers in eating disorders - Risk of refeeding syndrome - Long-term health implications	CLO 2	8
UNIT III		
Unit III: Assessment and Diagnosis - Nutritional assessment techniques: - Diet history and food frequency questionnaires - Anthropometric measurements - Biochemical tests - Behavioral assessment tools (e.g., EDE-Q, SCOFF questionnaire) - Multidisciplinary approach: role of dietitian, psychologist, physician, and other	CLO2,3	7
UNIT IV		



Unit IV: Dietary Management and Treatment Strategies - Principles of nutrition therapy for eating disorders - Meal planning and supervised meals - Refeeding protocols and managing refeeding syndrome - Weight restoration and normalization of eating patterns - Addressing fear foods and food rituals - Role of nutrition education and counseling - Role of evidence-based guidelines (e.g., NICE, Academy of Nutrition and Dietetics)	CLO 3	7
UNIT V		
Unit V: Special Considerations and Recovery - Cultural sensitivity and body image issues - Eating disorders in different populations (e.g., athletes, males, adolescents) - Relapse prevention and long-term support - Family-Based Therapy (FBT) and cognitive behavioral approaches - Role of support groups and community resources - Ethical considerations in treatment	CLO2,3	8
Total Hours		30

Textbooks:

- Brownell, K.D., & Walsh, B.T.** (Eds.). (2017). *Eating Disorders and Obesity: A Comprehensive Handbook* (3rd ed.). Guilford Press.
- Whitney, E.N., Rolfes, S.R.** (2020). *Understanding Nutrition* (16th ed.). Cengage Learning. (Chapters on eating behavior and clinical nutrition)
- Treasure, J., Schmidt, U., & van Furth, E.** (2003). *Handbook of Eating Disorders* (2nd ed.). Wiley.
- Herrin, M., & Matsumoto, M.** (2007). *Nutrition Counseling in the Treatment of Eating Disorders*. Routledge.

 Reference Books:

- Bryant-Waugh, R., & Lask, B.** (2013). *Eating Disorders in Children and Adolescents* (3rd ed.). Routledge.
- Fairburn, C.G.** (2008). *Cognitive Behavior Therapy and Eating Disorders*. Guilford Press.
- Levine, M.P., & Smolak, L.** (2010). *The Prevention of Eating Problems and Eating Disorders: Theory, Research, and Practice*. Routledge.
- Mehler, P.S., & Andersen, A.E.** (2010). *Eating Disorders: A Guide to Medical Care and Complications* (2nd ed.). Johns Hopkins University Press.



🌐 Online/E-Learning Resources:

1. **National Eating Disorders Association (NEDA):**
<https://www.nationaleatingdisorders.org>
– Educational articles, treatment resources, statistics, webinars.
2. **Academy for Eating Disorders (AED):**
<https://www.aedweb.org>
– Research publications, training webinars, and global guidelines.
3. **Psychology Tools – Eating Disorders Resources:**
<https://www.psychologytools.com>
– CBT worksheets, psychoeducational tools, and clinician resources.
4. **Coursera & edX Courses:**
 - *Understanding Eating Disorders* (University of Sydney – Coursera)
 - *Health and Wellness: Food and Nutrition* (edX – Wageningen University)
5. **PubMed & Google Scholar:**
– Peer-reviewed research articles on current trends, treatments, and case studies.



SEMESTER – VI

COURSE STRUCTURE

BSc. Nutrition & Dietetics



Name of the program		B. Sc. Nutrition and Dietetics			Semester		VI	
Course Name		Introduction to Statistical Analysis in Nutrition			Course Code		ACALR301	
Course pattern		2024			Version		I	
Teaching scheme					Assessment scheme			
Theory	Practical	Tutorial	Total credits	Hours	CIA (Continuous Internal Assessment)	ESA (End semester assessment)	Practical/Oral	
03	00	01	04	04	40	60	--	

Pre Requisites: 12th standard Biology

Course Objectives (COs)	The objectives of the course: Introduction to Statistical Analysis in Research are: 1: To revise measures of central tendency 2: To introduce correlation and regression analysis 3: To learn probability distribution 4: To understand different sampling techniques and distribution 5: To interpret parametric and non-parametric tests
Course Outcomes (CLOs)	Students undertaking this course would be able to: 1: To revise the concept of central tendency 2: To Understand the concept of correlation and regression 3: To introduce and interpret probability distribution 4: To learn different sampling techniques 5: To discuss and interpret case studies using parametric and non-parametric tests

Course Contents/Syllabus:

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

Descriptors/Topics	CLO	Hours
UNIT I		
Descriptive Statistics: Measures of central tendency-Arithmetic Mean, Median, Mode Measures of dispersion- Range, Quartile deviation, Standard deviation	CLO 1	09
UNIT II		
Correlation & Regression Correlation- Karl Pearson's coefficient of correlation, spearman's rank correlation coefficient. Regression-Finding regression equations and coefficients	CLO 2	09
UNIT III		
Probability distributions: Binomial distributions, Poisson distribution, Normal distribution and their applications	CLO 3	09
UNIT IV		
Sampling methods & sampling distributions: Sampling methods: Population and sample, Sampling distributions: Chi square, t and F distributions-definition, properties and tables of distribution	CLO 4	09
UNIT V		

Parametric tests:, ANOVA Non Parametric tests: Chi square test of independence and goodness of fit, sign test	CLO 5	09
Total Hours		45

Learning resources

Textbooks:

1. Kothari C.R. , Garg Gaurav, Research Methodology, New Age International Publishers, edition-fourth, September (2019)
2. Panneerselvam, R., Research Methodology, Prentice Hall of India Learning Pvt. Ltd. (2014)

Reference Books:

1. Stringer, E. Action research (4th ed.) Thousand Oaks CA; SAGE. (2013).
2. Weathington, B.L., Cunningham C. J.L. and Pittenger, D. J. Research Methods for the Behavioural and Social Sciences. New Jersey: John Wiley. (2010)

Online resources:

1. <https://www.bmj.com/about-bmj/resources-readers/publications/statistics-square-one/13-study-design-and-choosing-statistics>
2. https://www.sas.com/en_in/insights/analytics/statistical-analysis.html



COURSE CURRICULUM

Name of the Program:		BSc Nutrition and Dietetics		Semester : 6 th		Level: UG	
Course Name		Weight Management and Bariatrics		Course Code/ Course Type		UBSND 310/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
2		-	2	3	20	30	-
Pre-Requisite:							
Course Objectives (CO):					The objectives of Weight Management and Bariatrics are: 1. To understand the basic concept of Weight management and Adipose Tissue in relation with-Overweight, Obesity and Underweight. 2. To remember the various tools and assessment methods to recognise Obesity and Underweight. 3. To analyse various causes and consequences of Obesity and Underweight. 4. To learn and recognise the effective strategies to control underweight and obesity. 5. To remember the concept of bariatrics and role of Nutrition in different bariatrics procedure.		
Course Learning Outcomes (CLO):					Students would be able : 1. To explain the concept of Obesity, underweight and different types of Adipose tissue. 2. To identify the assessment methods for Underweight and Obesity. 3. To correlate between various causes of imbalance in Body weight and their effect on metabolic health. 4. To develop effective and personalized nutrition and exercise plan for the client suffering with imbalance in body weight. 5. To effectively remember the concept of bariatrics and role of Nutrition in different bariatrics procedure.		

Course Contents/Syllabus:

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



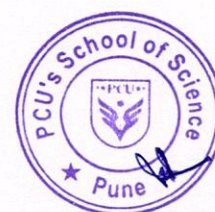
Descriptors/Topics	CLO	Hours
UNIT I		
Introduction to Weight management Prevalence of Obesity and Underweight in Indian Scenario, Percent of Body fat and Components of Body fat, Adipose tissue and its composition, Developmental and Reactive Obesity	1	6
UNIT II		
Assessment of Obesity and Underweight: Types of Obesity-Android, gynoid, Gluteofemoral, Various Assessment methods- Anthropometry (WHR, MUAC), BCA, Gene Testing, Methods to detect body fat	2	6
UNIT III		
Causes and Consequences of Obesity and Underweight: Various factors influencing Obesity and Underweight- Genetical Susceptibility, Eating Habits, Sedentary Lifestyles, Role of Various Medications, Social and Economic issues, Alcohol Consumption and Smoking, Hormonal Susceptibility, Sleep Deprivation, Physical Consequences-Disorders and Diseases, Risks to psychological and social well-being, Difficulties with day-to-day living.	3	6
UNIT IV		
Various strategies to Combat Underweight and Obesity: Role of Diet Therapy, Behavioral Counselling Measures, Pharmacotherapy, Physical Exercises Role	4	6
UNIT V		
-Introduction to Bariatrics: Definition of Bariatrics, Types of Bariatrics Surgery, Role of Nutrition Pre and Post Bariatrics	5	6
Total Hours		30

Learning resources

4. Textbooks: "Nutrition and Weight Management"-
<https://www.researchgate.net/publication/358604597>
5. "Integrating Physical activity, diet and Weight Management in Primary Health care" By WHO
6. "Reset-A Guide towards weight management and healthy lifestyle":-By Ruchu Kuthiala.

Online Resources:

<https://pmc.ncbi.nlm.nih.gov/articles/PMC8017325/>



Course Curriculum

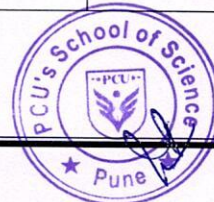
Name of the Program:		BSc Nutrition and Dietetics			Semester		6	
Course Name		Weight Management and Bariatrics: Lab			Course Code		UBSND 311/MAJM	
Course Pattern		2024			Version		1.0	
Teaching Scheme					Assessment Scheme			
Theory	Practical	Tutorial	Total Credits	Hrs.	CIA (Continuous Internal Assessment)	ESA (End Semester Assessment)	Practical/ Oral	
	1		1	2	25		25	
Pre-Requisite: 12 th Science Pass								
Course Objectives (CO):			The objectives of Weight Management and Bariatrics are: 6. To understand the basic concept of Weight management and Adipose Tissue in relation with-Overweight, Obesity and Underweight. 7. To remember the various tools and assessment methods to recognize Obesity and Underweight. 8. To analyse various causes and consequences of Obesity and Underweight. 9. To learn and recognize the effective strategies to control underweight and obesity. 10. To remember the concept of bariatrics and role of Nutrition in different bariatrics procedure. 6.					
Course Learning Outcomes (CLO):			Students would be able : 5. To explain the concept of Obesity, underweight and different types of Adipose tissue. 6. To identify the assessment methods for Underweight and Obesity. 7. To correlate between various causes of imbalance in Body weight and their effect on metabolic health. 8. To develop effective and personalised nutrition and exercise plan for the client suffering with imbalance in body weight. 9. To effectively					

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	Assessment of Obesity and Underweight	Week 1-2	To assess the BMI in 5 people and draw inferences according to their weight	1	2
2.	Body Fat percentage	Week 3-4	To Study various methods to assess Body fat and	1	4



			analyse their advantages and Disadvantages		
3.	Case study- Obesity	Week 5-6	To perform and calculate the caloric requirement of an obese Individual	2	2
4.	Case Study-Underweight	Week 7-8	To perform and calculate the caloric requirement of an underweight Individual	2	2
5.	Low Caloric Diet Plans	Week 9-10	To prepare Low caloric Diet Plans for Obese Individuals.	2	4
6.	High Caloric Diet Plans	Week 11	To prepare High Caloric diet Plan to improve Muscle mass	3	4
7.	Supplements	Week 12-13	To learn and analyze the supplements for Obese and Underweight	4	4
8.	Bariatrics-Pre Surgery	Week 14	To design a diet plan and recipes pre Bariatrics	5	4
9.	Bariatrics-Post surgery	Week 15	To design a diet plan and recipes pre Bariatrics	5	6
			Total		30 hours

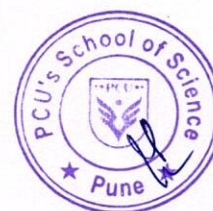
Learning resources

Learning resources

7. Textbooks: "Nutrition and Weight Management"-
<https://www.researchgate.net/publication/358604597>
8. "Integrating Physical activity, diet and Weight Management in Primary Health care" By WHO
9. "Reset-A Guide towards weight management and healthy lifestyle":-By Ruchu Kuthiala.

Online Resources:

<https://pmc.ncbi.nlm.nih.gov/articles/PMC8017325/>



Course Curriculum

Name of the Program:		B.Sc Nutrition and Dietetics		Semester : 1		Level: UG	
Course Name		Food Preservation		Course Code/ Course Type		UBSND 312	
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: 12 th Science Pass							
Course Objectives (CO):				The objectives of Food Preservation are: 1. Provide fundamental knowledge of food preservation techniques and their significance in extending shelf life. 2. Explain the principles behind various physical, chemical, and biological preservation methods. 3. Introduce students to traditional and modern food preservation technologies. 4. Develop practical skills in handling and applying preservation techniques to maintain food safety and quality.			
Course Learning Outcomes (CLO):				Students would be able to: 6. Identify different types of food spoilage and understand the factors affecting food deterioration. 7. Explain and apply various food preservation techniques such as refrigeration, freezing, dehydration, fermentation, and chemical preservation. 8. Demonstrate knowledge of food additives, preservatives, and their effects on food quality and safety. 9. Assess the role of food preservation in maintaining nutritional value and reducing food waste.			

Course Contents/Syllabus:

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

BSc. Nutrition & Dietetics



Descriptors/Topics	CLO	Hours
UNIT I		
FOOD PRESERVATION Introduction, Importance, principle and Types, Historical perspectives and development of preservation techniques, Causes and types of food spoilage	CLO 1	8
UNIT II		
HIGH AND LOW TEMPERATURES PRESERVATION Pasteurization. Sterilization. Canning. Freezing. Refrigeration	CLO 2	5
UNIT III		
MOISTURE REMOVAL PRESERVATION TECHNIQUE Concentration. Drying. Dehydration. Freeze Drying. Dehydro freezing	CLO 3	5
UNIT IV		
Ohmic Heating. Pulsed Electric Field. High Pressure Processing (HPP) Class- Class I and Class II its role. Permitted Preservatives and Levels. Preparation of Jam, Jelly, Marmalade, Preserves, candy, glazed crystallized fruit, sauces, chutney, Pickles	CLO 4	5
UNIT V		
Fermentation, Irradiation, Combination and Pickling Techniques Types of Fermentation. Fermented Foods. Properties of irradiation. Microwave heating	CLO 5	7
Total Hours		30

Learning resources

Textbooks:

1. **Potter, N.N., & Hotchkiss, J.H.** (1995). *Food Science* (5th ed.). Springer.
2. **Ramaswamy, H.S., & Marcotte, M.** (2006). *Food Processing: Principles and Applications*. CRC Press.
3. **Jay, J.M.** (2000). *Modern Food Microbiology* (6th ed.). Aspen Publishers.

Reference Books:

1. **Desrosier, N.W.** (1977). *The Technology of Food Preservation* (4th ed.). AVI Publishing.
2. **Frazier, W.C., & Westhoff, D.C.** (2008). *Food Microbiology* (4th ed.). McGraw-Hill Education.

Online Resources / E-Learning:

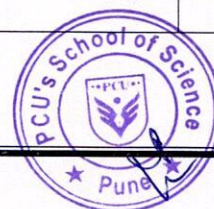
- **FSSAI – Food Preservation and Safety Standards:**
<https://www.fssai.gov.in>
Provides Indian regulations, food safety manuals, and training videos.
- **National Center for Home Food Preservation (USA):**
<https://nchfp.uga.edu>
Offers preservation techniques, guidelines, and scientific resources.
- **MOOCs (edX / Coursera):**
 - *Food Preservation Technologies – EIT Food / University of Reading*
 - *Food Fermentation – NPTEL, IIT Kharagpur*
- **YouTube Educational Channels:**
 - *Food Processing and Preservation – NPTEL Lectures*
 - *FoodTech Pathshala – Food Preservation Techniques*



Name of the Program:		BSc ND		Semester : 6		Level: UG	
Course Name		Food Preservation Lab		Course Code/ Course Type		UBSND313 /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 Food Preservation lab are: 1: To Understand the basic principles and importance of food preservation methods. 2: To Demonstrate hands-on skills in various food preservation techniques. 3: To Analyze the effects of preservation on food quality and shelf life. 4: To Apply safety and hygiene standards during food processing and preservation. 5: To Develop and evaluate preserved food products based on sensory, nutritional, and microbial quality.			
Course Learning Outcomes (CLO):				Students would be able to: 1. To describe the scientific basis of common preservation methods (e.g., drying, freezing, pickling). 2. To explain the role of preservatives and packaging in extending shelf life. 3. To operate equipment used in preservation such as dehydrators, autoclaves, and canners. 4. To prepare food items using preservation methods such as jam making, pickling, and fermentation. 5. To evaluate physicochemical changes in food due to preservation. And design a preserved food product with proper labelling and documentation.			

Practical Plan

Practical Number	Practical	Week Number	Details	CLO	Hours
1	Practical 1:	Week1	Demonstrations of various machineries used in food Preservation	CLO1	2
2	Practical 2:	Week 2	Effect of Blanching on food characteristics	CLO1	2
3.	Practical 3:	Week 3	Sun drying/dehydration of fruits and rehydration tests for the dried samples	CLO1	4
4	Practical 4:	Week 4	Preservation by Freezing	CLO 1	2
5	Practical 5:	Week 5	Preservation by high concentration of sugar (Jam)	CLO 2	2
6	Practical 6:	Week 6	Preservation by high concentration of sugar (Jelly)	CLO 2	2



7	Practical 7:	Week 7	Preparation of Sauces	CLO1/ 2	2
8	Practical 8:	Week 8,9	Preparation of Pickles	CLO 2	4
9	Practical 9:	Week 10,11	Preparation of fruit bar by using fruit pulp	CLO 2	2
13	Practical 13:	Week 12,13	SPECIFICATION SUGGESTED BY FSSAI - importance of quality attributes and standards in Food Industry.	CLO 5	2
14	Practical 14:	Week 14	Visit to food industry	CLO 5	4
15	Practical 15:	Week 15	Report writing on food industry visit	CLO 5	2
			Total Hours		30

Text book:

Modern Food preservation by Me Williams M & Paine H. 1994

Food processing and preservation by Subbulakshmi G, 2001

Nutritional Evaluation of food processing by Harris R S, 1987

Reference books:

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

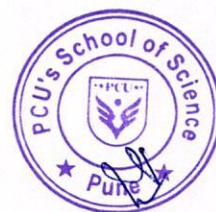
Online Resources/E-Learning resources

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>



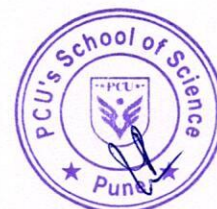


BSc. Nutrition & Dietetics

Diabetes Management and Care

Name of the Program:		BSc Nutrition and Dietetics		Semester: 6		Level: UG	
Course Name		Diabetes Management and Care		Course Code/ Course Type		UBSND 314 B /MAJE	
Course Pattern		2025		Version		1.1	
Teaching Scheme					Assessment Scheme		
Theory	Practical	Tutorial	Total Credits	Hours	CIA (Continuous Internal Assessment)	ESA (End Semester Assessment)	Practical/ Oral
2	-	-	2	2	40	60	-
Pre-Requisite: 10+2 Science, Nutrition, and Metabolism							
Course Objectives (CO):				The objectives of the course Diabetes Management and Care are: 1. Understand the definition and types of (DM), Explore the epidemiology and global burden of diabetes, and Identify risk factors, early warning signs of DM 2. Understand the principles and clinical applications of diagnostic tests used in diabetes. 3. To provide an in-depth understanding of the physiological and pathophysiological mechanisms underlying Diabetes Mellitus (DM), with a focus on hormonal regulation, the Ominous Octet of Type 2 DM, and how blood glucose is regulated in health and disease. 4. Understand the importance of diet in the prevention and management of DM. Understand the role of lifestyle interventions in the prevention and management of diabetes. 5. To impart knowledge on the principles and practices of patient education with a focus on diabetes prevention, treatment adherence, and behavioral change strategies.			
Course Learning Outcomes (CLO):				Students would be able to understand 1. Different types of DM, its underlying pathophysiological mechanisms in various types of diabetes. Interpret current epidemiological data to assess the prevalence and impact of diabetes globally and regionally. Identify major risk factors (modifiable and non-			

	modifiable) associated with diabetes Recognize the common signs, symptoms, and complications of diabetes across different types. 2. Interpret results from fasting blood sugar (FBS), postprandial blood sugar (PPBS), HbA1c, and oral glucose tolerance test (OGTT). 3. Explain the pathophysiological mechanisms underlying Type 1 and Type 2 Diabetes Mellitus. Discuss the role of key hormones (insulin, glucagon, incretins, etc.) in the regulation of blood glucose. Critically analyse the components of the "Ominous Octet" and their implications in the progression of Type 2 DM. 4. Use the food exchange list to develop personalized diabetic meal plans and calculate and evaluate the nutritional requirements of diabetic individuals. Explain the role of physical activity and exercise in improving insulin sensitivity and overall diabetes outcomes and develop a personalized lifestyle modification plan incorporating diet, exercise, and medication adherence for diabetic patients. 5. Describe the role of patient education in chronic disease management and demonstrate the ability to design tailored education plans for diabetic patients and Apply principles of DSME to assess patient needs, readiness to change, and select appropriate educational strategies and tools.
--	--



Descriptors/Topics	CLO	Hours
UNIT I		
Introduction to Diabetes: Definition and classification of Diabetes Mellitus (Type I, Type II, Gestational, MODY and LADA, Insulin Resistance and Prediabetes, Epidemiology, Prevalences, Global Scenario, Risk Factors DM, Symptoms and Complications.	CLO 1	6
UNIT II		
Diagnosis and Monitoring: Fasting blood sugar, Post Prandial, HBA1c, Glycosuria, ketonuria, random blood sugar, Glucose tolerance test, OGTT and impaired glucose tolerance.	CLO 2	6
UNIT III		
Pathophysiology of DM, Role of Hormones, Ominous Octet of type II Diabetes, Regulation of blood sugar.	CLO3	6
UNIT IV		
Dietary Management: Management of diabetes, role of diet, food exchange list, diet and insulin, nutritional requirement, dietary guidelines of DM, role of fiber, artificial sweeteners, Glycemic index and Glycemic Load and its factors affecting GI and GL. Lifestyle Management: Role of physical activity, exercise recommendation, Oral hypoglycemic drugs, diabetes education, alcohol, and dietary supplements.	CLO4	6
UNIT V		
Patient Education, Self-Management and Prevention: Recent advances in Diabetes, DSME (Diabetes Self-Management and Education), Community health strategies for Diabetes Prevention and Research trends and future directions.	CLO5	6
Total Hours		30

References:

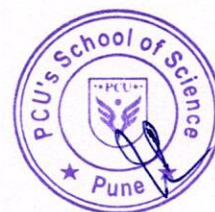
1. B. Srilakshmi (Dietetics)
2. Food & the Nutrition Care Process, Krause and Mahan, 16th Edition

E- Learning

<https://www.eintegrity.org/healthcare-course/diabetes-care/>

<https://cdiacademy.org.in/>

<https://idfdiabeteschool.org/>

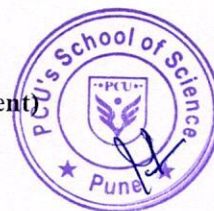


COURSE CURRICULUM

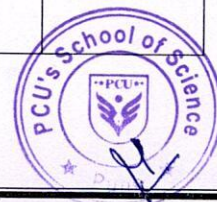
Name of the Program:		BSc CP		Semester : 6		Level: UG	
Course Name		Understanding alternative medicines		Course Code/ Course Type		UBSND315	
Course Pattern		2024		Version		1.0	
Teaching Scheme				Assessment Scheme			
Theory	Practical	Tutorial	Total Credits	Hours	CIA (Continuous Internal Assessment)	ESA (End Semester Assessment)	Practical/ Oral
2	-	-		2			-
Pre-Requisite: SYBSc.							
Course Objectives (CO):				The objectives of Understanding Alternative Medicines analysis are: 1. Define and recall foundational concepts and ethical aspects of alternative medicine. 2. Explain the basic principles and components of Ayurveda, including diet, doshas, and lifestyle 3. Apply the knowledge of aromatherapy and Bach flower remedies for emotional and physical well-being. 4. Analyze the use of acupressure and neurotherapy techniques in body-based healing 5. Evaluate mind-energy-based therapies such as hypnotherapy, Reiki, and energy healing for emotional and spiritual health.			
Course Learning Outcomes (CLO):				On successful completion of the Course, students will be able to: 1. Define alternative medicine and its key characteristics. 2. Recall major differences between alternative and allopathic medicine. 3. List the historical roots of various holistic health systems. 4. Identify the mind-body concepts common to alternative therapies. 5. State the basic principles of energy and balance in healing systems.			

Course Contents/Syllabus:

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



Descriptors/Topics	CLO	Hours
UNIT I		
Foundations of Alternative Medicine: Definition, scope and principles of alternative medicine, Comparison with allopathic (modern) medicine, Mind-body connection in healing, History and evolution of holistic health systems, Concepts of energy, balance, and wellness in traditional healing, Ethical considerations and safety in alternative therapies.)	CLO 1	06
UNIT II		
Basics of Ayurveda: Introduction to Ayurveda: history, philosophy, and goals, The concept of Tridosha: Vata, Pitta, and Kapha, (Ayurvedic diagnosis: pulse reading, tongue analysis, Panchakarma therapy: detoxification and rejuvenation,) Ayurvedic diet and lifestyle recommendations, Common Ayurvedic herbs and their uses.	CLO 2	06
UNIT III		
Aromatherapy and Bach Flower Remedies: Introduction to aromatherapy: principles and methods of use, Essential oils: properties, uses, and precautions, Aromatherapy for stress, sleep, and immunity, Introduction to Bach Flower Therapy, history and principles, The 38 Bach Flower remedies: emotional healing and selection process, Practical applications of flower remedies for mental and emotional wellbeing.)	CLO 3	06
UNIT IV		
Body-based Therapies – Acupressure and Neurotherapy: Introduction to Acupressure: meridians and pressure points, Acupressure techniques for common ailments (headache, digestion, fatigue), Safety and contraindications of acupressure, Basics of	CLO 4	06

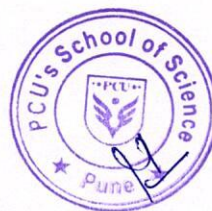


Neurotherapy: Indian origin and foundational concepts, Common neurotherapy techniques and body balancing, Use of Neurotherapy in managing chronic conditions.		
UNIT V		
Mind-Energy Therapies –Introduction to Hypnotherapy: myths, facts, and scientific basis, Stages of hypnosis and therapeutic applications, Self-hypnosis and guided imagery techniques, Principles of energy healing and chakra systems, Reiki: history, principles, and hand positions, Case studies and ethical guidelines for energy-based healing.	CLO 5	06
Total Hours		30

Learning resources

Textbooks:

1. Khurana, A. (2017). *Neurotherapy: Manual of Indian healing system*. Aarogya Mandir Publications.
(Focused resource on Indian Neurotherapy techniques)
2. Dale, C. (2009). *The subtle body: An encyclopedia of your energetic anatomy*. Sounds True.
(Explores chakras, energy systems, and healing practices such as Reiki)
3. Chopra, D. (2001). *Perfect health: The complete mind/body guide*. Harmony Books.
(Covers Ayurvedic principles in an easy-to-understand format)
4. Worwood, V. A. (2016). *The complete book of essential oils and aromatherapy* (25th Anniversary ed.). New World Library.
(A comprehensive guide to aromatherapy applications and oils)
5. Howard, J. (2005). *Bach flower remedies: Form and function*. Floris Books.
(Provides in-depth understanding of each flower remedy and emotional applications)



Name of the Program:		BSc CP		Semester: VI/VIII		Level: UG	
Course Name		PSY Minor5: Mindfulness and Mental Health		Course Code/ Course Type		USCPSY105/ MIN	
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:							
Course Objectives (CO):				The objectives of Mindfulness & Mental Health are: 1.To understand the concept of mindfulness and its historical and cultural origins. 2. To explore the relationship between mindfulness and mental health. 3. To apply the evidence-based mindfulness practices for stress reduction and emotional regulation. 4.To understand the role of mindfulness in improving interpersonal relationships and overall well-being. 5. To implement personal mindfulness skills for daily use.			
Course Learning Outcomes (CLO):				Students would be able to: 1. Define the concept of mindfulness and describe its historical and cultural origins. 2. Analyze the relationship between mindfulness and mental health. 3. Apply evidence-based mindfulness practices to reduce stress and regulate emotions. 4. Examine how mindfulness improves interpersonal relationships and evaluate its impact on overall well-being. 5. Develop and implement personal mindfulness strategies for daily life.			



COURSE CURRICULUM

Course Contents/Syllabus:

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

Descriptors/Topics	CLO	Hours
UNIT I		
Foundations of Mindfulness: Definition and principles of mindfulness, Historical and cultural roots of mindfulness (Eastern and Western perspectives), Introduction to meditation and mindfulness practices, Key concepts: Presence, awareness, and non-judgment, Benefits of mindfulness for mental health and well-being	CLO1	6
UNIT II		
The Science of Mindfulness: Neuroscience of mindfulness: How mindfulness affects the brain, Mindfulness and stress reduction: Understanding the stress response system, Evidence-based benefits for mental health: Anxiety, depression, and resilience, Role of mindfulness in promoting emotional regulation	CLO2	6
UNIT III		
Practicing Mindfulness in Daily Life: Techniques for integrating mindfulness into everyday routines, Mindful breathing, mindful eating, and mindful walking, Overcoming barriers to mindfulness practice, Time management and prioritization through mindful awareness	CLO3	6
UNIT IV		
Mindfulness in Relationships and Communication: Building empathy and compassion through mindfulness, Active listening and mindful communication, Managing conflicts and improving interpersonal relationships, Cultivating gratitude and kindness	CLO4	6
UNIT V		
Mindfulness for Holistic Wellbeing: Mindfulness and physical health: Sleep, diet, and exercise, Mindfulness and self-care strategies, Understanding the connection between mindfulness, meaning, and purpose, Designing a personal mindfulness plan for long-term well-being	CLO5	6
Total Hours		30

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_jpFXWtWmkLIYx9

2. 5 Ways to Listen Better – Julian Treasure
https://youtu.be/cSohjIYQI2A?si=B1_qW-ptdk9eZsxc

3. The Art of Active Listening | The Harvard Business Review Guide
<https://youtu.be/aDMtx5ivKK0?si=Id-qnepOgtRLow5c>

4. Brene Brown on Empathy
https://youtu.be/1Evwgu369Jw?si=SvUR8PJJoEu8_o398

5. Andy Puddicombe, "Ten Mindful Minutes" TED Talk

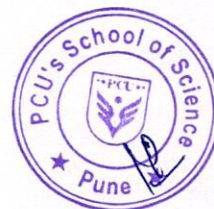
6. How mindfulness changes the emotional life of our brains by Richard J. Davidson
<https://youtu.be/7CBfCW67xT8?si=f6k5DVqXaWxftNy>

7. The Science of Mindfulness: A Research-Based Path to Well-Being
https://youtu.be/wxBdyBWx-EM?si=FNwTvPtqlaamR_Pk

8. The Power of Mindfulness: What You Practice Grows Stronger by Shauna Shapiro
<https://youtu.be/leblJdB2-Vo?si=x4L1MgAuyu10vKrr>

9. Mindful Eating:
<https://youtu.be/aa3N3jh3C0A?si=9bOXHHxPM1BX-WOO>

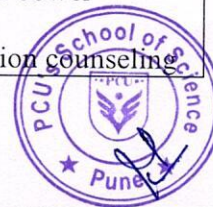
10. Mindful Eating: https://youtu.be/CtOU4f3smt4?si=EtQ9fBCMyn_4JG8L





COURSE CURRICULUM

Name of the Program:		BSc ND		Semester : 6		Level: UG	
Course Name		Functional Bowel Disorders		Course Code/ Course Type		UBSND 314 A	
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			-
Pre-Requisite: SYBSc.							
Course Objectives (CO):				The objectives of Functional Bowel Disorders are: 1: Explain the concept, classification, epidemiology, and pathophysiology of functional bowel disorders using Rome IV criteria. 2: Identify and differentiate clinical symptoms of various functional bowel disorders and apply appropriate diagnostic tools. 3: Apply evidence-based nutritional strategies, including therapeutic diets, for the management of functional bowel disorders. 4: Evaluate medical, psychosocial, and integrative therapeutic approaches used in the management of functional bowel disorders. 5: Demonstrate effective nutrition counseling, behavioral modification strategies, and follow-up planning for individuals with chronic functional bowel disorders.			
Course Learning Outcomes (CLO):				On successful completion of the Course, students will be able to: 1. Explain the concept, classification, epidemiology, and pathophysiology of functional bowel disorders using Rome IV criteria. 2. Identify and differentiate the clinical features of various functional bowel disorders and apply appropriate diagnostic tools for assessment. 3. Apply evidence-based nutritional and dietary interventions, including therapeutic diets, for the management of functional bowel disorders. 4. Evaluate medical, psychosocial, and integrative therapeutic approaches used in the management of functional bowel disorders. 5. Demonstrate effective nutrition counseling.			

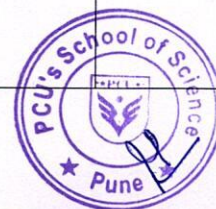


skills, behavioral modification strategies, and follow-up planning for individuals with chronic functional bowel disorders.

Course Contents/Syllabus:

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

Descriptors/Topics	CLO	Hours
UNIT I		
Unit I: Introduction to Functional Bowel Disorders - Overview and classification (Rome IV criteria) - Epidemiology and prevalence - Pathophysiology: gut-brain axis, visceral hypersensitivity, microbiota changes - Types of FBDs: IBS, functional constipation, functional diarrhea, bloating, and dyspepsia	CLO 1	06
UNIT II		
Unit II: Symptoms and Diagnosis - Clinical symptoms of FBDs - Red flag vs non-alarming symptoms - Diagnostic tools: Rome IV criteria, stool form charts (Bristol), food and symptom diaries - Psychological and lifestyle factors in FBDs	CLO 2	06
UNIT III		
Unit III: Nutrition and Dietary Management - Nutrition implications of FBDs - Low FODMAP diet: phases and implementation - Role of dietary fiber, prebiotics, and probiotics - Elimination diets and food intolerance testing - Importance of hydration and eating habits	CLO 3	06
UNIT IV		
Unit IV: Medical and Therapeutic Approaches - Common pharmacological treatments: antispasmodics, laxatives, antidiarrheals - Role of gut microbiome modulation - Psychosocial therapies: CBT, relaxation therapy - Integrative and complementary therapies	CLO 4	06



UNIT V		
Unit V: Nutrition Counseling and Patient Support	CLO 5	06
• Nutrition counseling techniques for chronic bowel issues • Behavioral change and motivational interviewing • Monitoring and follow-up of diet plans • Role of multidisciplinary teams in FBD management • Case studies and nutrition care process (NCP) documentation		
Total Hours		30

Textbooks:

1. Talley, N.J., & O'Connor, S. (2021). *Clinical Examination: A Systematic Guide to Physical Diagnosis* (8th ed.). Elsevier. (Chapters on gastrointestinal symptoms and diagnosis)
2. Mahan, L.K., Raymond, J.L. (2020). *Krause's Food & the Nutrition Care Process* (15th ed.). Elsevier. (Chapters on gastrointestinal disorders including IBS)
3. Gibson, P.R. (2017). *The Complete Low-FODMAP Diet: A Revolutionary Plan for Managing IBS and Other Digestive Disorders*. Experiment Publishing.

Reference Books:

1. Spiller, R.C., & Garsed, K.C. (2011). *Irritable Bowel Syndrome: Diagnosis and Management*. CRC Press.
2. Chey, W.D. (Ed.). (2021). *Functional Gastrointestinal Disorders: A Case-Based Approach*. Springer.
3. Drossman, D.A. (2016). *The Rome IV Guidelines for Functional Gastrointestinal Disorders*. Rome Foundation.

Online Resources / E-Learning:

1. Rome Foundation – Functional GI Disorders
<https://theromefoundation.org>
– The global standard for diagnosis and education on FBDs.
2. Monash University – Low FODMAP Diet
<https://www.monashfodmap.com>
– Research, app, and resources on dietary treatment of IBS and FBDs.
3. International Foundation for Gastrointestinal Disorders (IFFGD):
<https://www.iffgd.org>
– Patient-centered guides, symptoms tracker tools, and clinical updates.
4. NHS UK – IBS and Gut Health:
<https://www.nhs.uk/conditions/irritable-bowel-syndrome-ibs>
– Publicly accessible information for education and self-care guidelines.
5. NPTEL (India) – Lectures on Nutrition and Clinical Dietetics
<https://nptel.ac.in>
– Look for GI health modules in food science/nutrition-related courses.
6. YouTube Channels:
 - Monash FODMAP – Dietary education videos
 - GI Society – Gut health awareness and research translation
 - Nutrition Made Simple – Digestive health content for students

