

Sadakathullah Appa College

(Autonomous)

(Reaccredited by NAAC at an 'A' Grade. An ISO 90012015 Certified Institution)

**Rahmath Nagar, Tirunelveli- 11.
Tamil Nadu**

DEPARTMENT OF NUTRITION AND DIETETICS



CBCS SYLLABUS

Learning Outcomes-based Curriculum Framework for NUTRITION AND DIETETICS (B.Sc.)

**(Applicable for the students admitted from June 2021 as per
the Resolutions of the Academic Council Meeting held on 20.03.2021)**

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B.Sc. Nutrition and Dietetics
DISTRIBUTION OF HOURS, CREDITS, NO. OF PAPERS & MARKS
(Applicable for students admitted in June 2021 and onwards)

Part	Course	Semester	Hours	Credits	Papers	Marks					
I	Tamil / Arabic	I to IV	24	12	4	400					
II	English	I to IV	24	12	4	400					
III	Discipline Specific Core (DSC) + Field work & Practical	I to VI	73	62	20	1700					
	Discipline Specific Elective (DSE) + Project	III & VI	16	18	4	400					
	Allied Theory & Practicals	I to IV	24	16	8	600					
IV	Non-Major Elective (NME)	III to IV	4	4	2	200					
	Skill Enhancement Course (SEC)	III, IV & VI	10	10	5	500					
	Ability Enhancement Compulsory Course (AECC) Social Value Education (SVE)	I	2	2	1	100					
	Environmental Science (EVS)	II	2	2	1	100					
V	Extension Activities	IV	--	1+1	1	200					
	Library Reading Hour	V	1								
TOTAL			180	140	50	4600					
SEMESTER WISE DISTRIBUTION OF HOURS											
Part	I	II	III				IV				Total
SEM	T/A	ENG	DSC	FW	DSE/PRO	AL	NME	SEC	VE/EVS	LRH	
I	6	6	10	-	-	6	-	-	2		30
II	6	6	10	-	-	6	-	-	2		30
III	6	6	6	-	-	6	2	4	-	-	30
IV	6	6	6	-	-	6	2	4	-	-	30
V	-	-	21	-	8	-	-	-	-	1	30
VI	-	-	20	-	8	-	-	2	-		30
Total	24	24	73	-	16	24	4	10	4	1	180

COURSE Pattern
CBCS Syllabus – B.Sc., Nutrition and Dietetics
(2021-22 onwards)

SEM	Part	Course	Title of the paper	Course Code	H/W	L*	T*	P*	C	Marks		
										I	E	T
I	I	L-I	இக்காலத்தமிழ்	21ULTA11	6	6	-	-	3	25	75	100
			Basic Grammar and Translation-I	21ULAR11								
	II	L-I	Communicative English –I	21ULEN11	6	6	-	-	3	25	75	100
	III	DSC-I	Fundamentals of food science	21UCND11	4	3	1	-	4	25	75	100
	III	DSC-II	Human Development	21UCND12	4	3	1	-	4	25	75	100
	III	P-I	Food science & Human Development practical's	21UCND1P1	2	-	-	2	1	40	60	100/2
	III	A-I/1	Human Physiology I	21UAND11	4	3	1	-	3	25	75	100
	III	A-I/1P	Human Physiology I practical's	21UAND1P1	2	-	-	2	1	40	60	100/2
II	I	L-II	சமயத்தமிழ்	21ULTA21	6	6	-	-	3	25	75	100
			Grammar and Translation - II	21ULAR21								
	II	L-II	Communicative English – II	21ULEN21	6	6	-	-	3	25	75	100
	III	DSC-III	Principles of Nutrition	21UCND21	4	3	1	-	4	25	75	100
	III	DSC-IV	Food Chemistry	21UCND22	4	3	1	-	4	25	75	100
	III	P-II	Principles of nutrition & Food chemistry Practical's	21UCND2P1	2	-	-	2	1	40	60	100/2
	III	A-I/2	Human Physiology II	21UAND21	4	3	1	-	3	25	75	100
	III	A-I/2P	Human Physiology II Practical's	21UAND2P1	2	-	-	2	1	40	60	100/2
III	I	L-III	பயன்பாட்டுத்தமிழ்	21ULTA31	6	6	-	-	3	25	75	100
			Modern Prose	21ULAR31								
	II	L-III	One-Act Plays and Writing Skill	21ULEN31	6	6	-	-	3	25	75	100
	III	DSC-V	Nutrition through life Span	21UCND31	4	3	1	-	4	25	75	100
	III	P-III	Nutrition through life span Practical's	21UCND3P1	2	-	-	2	1	40	60	100/2
	III	A-II/1	Baking and Confectionery	21UAND31	4	3	1	-	3	25	75	100
	III	A-II/1P	Baking and confectionery Practical's	21UAND3P1	2	-	-	2	1	40	60	100/2

	IV	SEC-I	Fundamentals of Computing and Security	21USFC31	2	2	-	-	2	25	75	100
	IV	SEC-II	SWAYAM - NPTEL Online Course	21USOC32	2	2	-	-	2	25	75	100
			Convenience And Health Foods	21USND32								
	IV	NME-I	Introduction to food and Nutrition	21UNND31	2	2	-	-	2	25	75	100
IV	I	L-IV	சங்கத்தமிழ் Classical Prose	21ULTA41 21ULAR41	6	6	-	-	3	25	75	100
	II	L-IV	A Practical Course in Spoken English	21ULEN41								
	III	DSC-VI	Medical nutrition Therapy	21UCND41	4	3	1	-	4	25	75	100
	III	P-IV	Medical nutrition Therapy Practical's	21UCND4P1	2	-	-	2	1	40	60	100/2
	III	A-II/1	Food Microbiology	21UAND41	4	3	1	-	3	25	75	100
	III	A-II/2P	Food Microbiology Practicals	21UAND4P1	2	-	-	2	1	40	60	100/2
	IV	SEC-III	Soft Skills-I	21USSS41	2	2	-	-	2	25	75	100
	IV	SEC-IV	Sports Nutrition	21USND42	2	2	-	-	2	25	75	100
	IV	NME-II	Health and Fitness	21UNND41	2	2	-	-	2	25	75	100
	V	ECA	Extra Curricular Activities		-	-	-	-	1	-	-	100
	V	SOP	Sadakath Outreach Programme		-	-	-	-	1	-	-	100
	III	FW/I	Field work/ Internship	21UFND41	-	-	-	-	2	-	-	100
V	III	DSC-VII	Food service management	21UCND51	5	4	1	-	4	25	75	100
	III	DSC-VIII	Housing and Interior Design	21UCND52	4	3	1	-	4	25	75	100
	III	DSC- IX	Food Preservation	21UCND53	4	3	1	-	4	25	75	100
	III	P-V	Food Service Management & Housing and Interior Design Practical's	21UCND5P1	4	-	-	4	2	40	60	100/2
	III	P-VI	Food Preservation Practical's	21UCND5P2	4	-	-	4	2	40	60	100/2
	III	DSE I-A/B/C	Functional foods and Nutraceuticals	21UEND51A	4	3	1	-	4	25	75	100
			Medical laboratory Techniques	21UEND51B								
			Post-harvest Technology	21UEND51C								
	III	DSE II-A/B/C	Introduction to Textiles	21UEND52A	4	3	1	-	4	25	75	100
			Food Product Development	21UEND52B								
			Hospital Dietetic Counselling	21UEND52C								
		LRH	Library Reading Hour	-	1	-	-	-	-	-	-	-
VI	III	DSC-X	Clinical Biochemistry	21UCND61	4	3	1	-	4	25	75	100

	III	DSC-XI	Community nutrition and Extension Education	21UCND62	4	3	1	-	4	25	75	100
	III	DSC-XII	Food Safety and Quality Control	21UCND63	4	3	1	-	4	25	75	100
	III	P-VII	Clinical Biochemistry Practicals	21UCND6P1	4	-	-	4	2	40	60	100/2
	III	P-VIII	Community Nutrition & Extension Education , Food Safety & Quality Control Practicals	21UCND6P2	4	-	-	4	2	40	60	100/2
	III	DSE III	Food Packaging	21UEND61A	4	3	1	-	4	25	75	100
			Women's Health & Nutrition	21UEND61B								
			Entrepreneurship Development	21UEND61C								
	III	DSE IV	Project	21UEND62	4+4*	-	-	-	6	-	-	100*
	IV	SEC-V	Natural Foods	21USND61	2	2	-	-	2	25	75	100
					180+4*				140			4600

* L – Lecture hours

* T – Tutorial hours

* P – Practical hours

* Extra hours for Project Work outside the working hours.

* Project Report - 60 marks, Viva-Voce Examination - 40 marks

Fieldwork Report - 60 marks, Viva-Voce Examination - 40 marks

**B.Sc. Nutrition and Dietetics COURSE STRUCTURE (CBCS)
(Applicable for students admitted in June 2021 and onwards)**

TITLE OF THE PAPERS, CREDITS & MARKS

GROUP II COURSES (TWO -YEAR LANGUAGE COURSES)

**(B.A. Arabic, B.A. Tamil, B.A. English, B.A. History, B.A. Economics,
B.Sc. Mathematics, B.Sc. Physics, B.Sc. Chemistry, B.Sc. Zoology,
B.Sc. Microbiology and B.Sc. Nutrition and Dietetics, B.Sc. Psychology)**

SEM	TITLE OF THE PAPER	COURSE CODE	H/W	C	I	E	T
PART I - TAMIL							
I	இக்காலத் தமிழ்	21ULTA11	6	3	25	75	100
II	சமயத் தமிழ்	21ULTA21	6	3	25	75	100
III	பயன்பாட்டுத் தமிழ்	21ULTA31	6	3	25	75	100
IV	சங்கத் தமிழ்	21ULTA41	6	3	25	75	100
TOTAL			24	12			400
PART I – ARABIC							
I	Applied Grammar and Translation – I	21ULAR11	6	3	25	75	100
II	Applied Grammar and Translation – II	21ULAR21	6	3	25	75	100
III	Applied Grammar and Translation – III	21ULAR31	6	3	25	75	100
IV	<i>Classical Prose</i>	21ULAR41	6	3	25	75	100
TOTAL			24	12			400
PART II – ENGLISH							
I	Prose, Poetry and Grammar-I	21ULEN11	6	3	25	75	100
II	Prose, Poetry and Grammar-II	21ULEN21	6	3	25	75	100
III	One – Act Plays and Writing Skill	21ULEN31	6	3	25	75	100
IV	A Practical Course in Spoken English	21ULEN41	6	3	25	75	100
TOTAL			24	12			400

PART III

DSC, DSE, Field work and Project									
SEM	Course	TITLE OF THE PAPER	COURSE CODE	H/W	C	MARKS			
						I	E	T	
I	DSC1	Fundamentals of food science	21UCND11	4	4	25	75	100	
	DSC2	Human Development	21UCND12	4	4	25	75	100	
	P-I	Food science & Human Development Practical's	21UCND1P1	2	1	25	75	100/2	
II	DSC3	Principles of Nutrition	21UCND21	4	4	25	75	100	
	DSC4	Food Chemistry	21UCND22	4	4	25	75	100	
	P-II	Principles of nutrition & Food chemistry Practical's	21UCND2P1	2	1	25	75	100/2	
III	DSC5	Nutrition through life Span	21UCND31	4	4	25	75	100	
	P-III	Nutrition through life span Practical's	21UCND3P1	2	1	25	75	100/2	
IV	DSC6	Medical nutrition Therapy	21UCND41	4	4	25	75	100	
	P-IV	Medical nutrition Therapy Practical's	21UCND4P1	2	1	25	75	100/2	
	FW/I	Field Work/Internship	21UFND41		2			100	
V	DSC7	Food service management	21UCND51	5	4	25	75	100	
	DSC8	Housing and Interior Design	21UCND52	4	4	25	75	100	
	DSC9	Food Preservation	21UCND53	4	4	25	75	100	
	P-V	Food Service Management & Housing and Interior Design Practical's	21UCND5P1	4	2	25	75	100/2	
	P-VI	Food Preservation Practical's	21UCND5P2	4	2	25	75	100/2	
	DSE-I	Functional foods and Nutraceuticals	21UEND51A	4	4	25	75	100	
		Medical laboratory Techniques	21UEND51B						
		Post-harvest Technology	21UEND51C						
	DSE-2	Introduction to Textiles	21UEND52A	4	4	25	75	100	
		Food Product Development	21UEND52B						
		Hospital Dietetic Counselling	21UEND52C						
VI	DSC10	Clinical Biochemistry	21UCND61	4	4	25	75	100	
	DSC11	Community nutrition and Extension Education	21UCND62	4	4	25	75	100	
	DSC12	Food Safety and Quality Control	21UCND63	4	4	25	75	100	
	P-VII	Clinical Biochemistry Practicals	21UCND6P1	4	2	25	75	100/2	
	P-VIII	Community Nutrition & Extension Education , Food Safety & Quality Control Practicals	21UCND6P2	4	2	25	75	100/2	
	DSE-III	Food Packaging	21UEND61A	4	4	25	75	100	
		Women's Health & Nutrition	21UEND61B						
		Entrepreneurship Development	21UEND61C						
	DSE-IV	Project	21UEND62	4	6			100	
	TOTAL			89	80			2100	

Part III – Allied								
SEM	Course	TITLE OF THE PAPER	COURSE CODE	H/W	C	MARKS		
						I	E	T
I	AI-1	Human Physiology I	21UAND11	4	3	25	75	100
	AI-1P	Human Physiology I Practical's	21UAND1P1	2	1	25	75	100/2
II	AI-2	Human Physiology II	21UAND21	4	3	25	75	100
	AI-2P	Human Physiology II Practical's	21UAND2P1	2	1	25	75	100/2
III	AII-1	Baking and Confectionery	21UAND31	4	3	25	75	100
	AII-1P	Baking and Confectionery Practical's	21UAND3P1	2	1	25	75	100/2
IV	AII-2	Food Microbiology	21UAND41	4	3	25	75	100
	AII-2P	Food Microbiology Practical's	21UAND4P1	2	1	25	75	100/2
TOTAL				24	16			600
Part IV – NME								
III	NME1	Introduction to food and Nutrition	21UNND31	2	2	25	75	100
IV	NME2	Health and Fitness	21UNND41	2	2	25	75	100
TOTAL				4	4			200
Part IV – SEC								
III	SEC-1	Fundamentals of Computer and Security	21USND31	2	2	25	75	100
	SEC-2	SWAYAM - NPTEL Online Certification Course	21USOC32	2	2	25	75	100
		Convenience and Health foods	21USND32					
IV	SEC-3	Soft Skills-I	21USSS41	2	2	25	75	100
	SEC-4	Sports Nutrition	21USND42	2	2	25	75	100
VI	SEC-5	Natural foods	21USND61	2	2	25	75	100
TOTAL				10	10			500
Part IV –Value Education & EVS								
I	VE	Value Education-I	21USVE1A	2	2	25	75	100
		Value Education-II	21USVE1B					
II	EVS	Environmental Science	21UEVS21	2	2	25	75	100
TOTAL				4	4			200

PART – V – Extension Activities

SEM	Extension Activities (Choose any one)	S. CODE	H/W	C	MARKS		
					I	E	T
I to IV	NCC	21UEXNCC		1			100
	NSS	21UEXNSS					
	Physical Education	21UEXPHE					
	Red Ribbon Club	21UEXRRC					
	Youth Red Cross	21UEXYRC					
	Youth Welfare	21UEXYWL					
	Yoga	21UEXYOG					
III to IV	Sadakath Outreach Programme (SOP)	21UEXSOP		1			100
	Total		-	2			200

Bachelor of Science (B.Sc.)

Nutrition and Dietetics

The students graduating with the Degree B.Sc will be able to:

PLO 1: Disciplinary Knowledge

- Acquire scientific knowledge and the understanding of major concepts and theoretical principles.

PLO 2: Creative Thinking and Practical Skills / Problem Solving Skills

- Enrich skills of observation / research related skills to draw logical inferences from scientific experiments/ programming and skills of creative thinking to develop novel ideas.
- Hone problem solving skills in theoretical, experimental and computational areas and to apply them in research fields and in real life situations.

PLO 3: Sense of inquiry and Skilled Communicator

- Develop the capability for raising appropriate questions relating to the current/emerging issues encountered in the scientific field and to plan, execute and express the results of experiments / investigations through technical writings as well as through oral presentations.

PLO 4: Ethical Awareness / Team Work / Environmental Conservation and Sustainability

- Equip them for conducting work as an individual / as a member, or as a leader in diverse teams upholding values such as honesty and precision and thus preventing unethical behaviours such as fabrication, falsification, misrepresentation of data, plagiarism etc. to ensure academic integrity.
- Realize that environment and humans are dependent on one another and to know about the responsible management of our ecosystem for survival, and for the well-being of the future generation as well.

PLO 5: Usage of ICT/ Lifelong Learning / Self-Directed Learning

- Inculcate the habit of learning continuously through the effective adoption of ICT to update knowledge in the emerging areas in Sciences for inventions/discoveries and also to engage in remote / independent learning.

Department of Nutrition and Dietetics

Programme: B.Sc.

PROGRAMME SPECIFIC OUTCOMES

PSO	Upon completion of B.Sc. Nutrition And Dietetics Degree Programme, the students will be able to:	PLOs Mapped
PSO - 1	Understand the fundamental concepts and principles relating to Nutrition and Dietetics	PLO-1
PSO - 2	Acquire practical skills to analyze and interpret nutrients quantitatively and qualitatively	PLO-2
PSO - 3	Plan a diet as a team, prepare and evaluate the nutrient content in the diet designed and present the results effectively	PLO-3
PSO - 4	Identify food adulterants to ensure food safety and quality food purchase and learn the effective utilization of food leftovers and biodegradable packaging	PLO-4
PSO - 5	Learn lifelong independently through the effective adoption of ICT to update knowledge in emerging areas and to enhance necessary aptitude and confidence to become professionals in various fields	PLO-5

SEMESTER – I

Course Title	இக்காலத் தமிழ் Ikkala Tamil (Modern Tamil)
Total Hrs.	90
Hrs./Week	6
Course Code	21ULTA11
Course Type	Part – I - Tamil
Credits	3
Marks	100

General Objective: To introduce literary history, the basics of grammar, and the genres such as poetry, short stories and essays.

Course Objectives:

CO	The learners will be able to:
CO-1	Understand the major literary forms such as poetry, short stories and essays and their characteristics.
CO-2	Apply their knowledge to learn the effective use of language and literature.
CO-3	Analyse the social / political / religious / economical issues dealt with in literary pieces.
CO-4	Differentiate the literary forms to know their nuances.
CO-5	Produce verses, short stories and essays.

அலகு 1 தமிழ்ச் செய்யுள்

1. தமிழ் - பாரதியார்
2. புதிய உலகு செய்வோம் - பாரதிதாசன்
3. மனிதனைத் தேடி - மு.மேத்தா
4. தொலைந்து போனவர்கள் - அப்துல் ரகுமான்
5. ஒவ்வொரு புல்லையும் பெயர் சொல்லி அழைப்பேன் - இன்குலாப்
6. சினேகிதனின் தாழ்வான வீடு - கலாப்ரியா
7. இடைவெளி - மனுஷ்ய புத்திரன்
8. சிறைச்சாலைக்காக - அறிவுமதி
9. விழித்தெழுத என் தேசம் - இரவிந்திரநாத் தாகூர் (ஜெயபாரதன் (மொ.பெ))
10. மறதி - ஈரோடு தமிழன்பன்
11. பெண்கவிகளின் கவிதைகள்
12. என்மேல் பரிவுகாட்டு என் ஆத்மாவே - கலீல் ஜிப்ரான்
13. அந்தி மனம் - கல்யாண்ஜி
14. நகைப்பா - மாமதயானை
15. பியானோ- பிரமிள்
16. அழிவு - ஆத்மாநாம்
17. உள் உலகங்கள் - ஞானக்கூத்தன்
18. கிளிக்குஞ்சு - ந.பிச்சமுர்த்தி
19. கடைசி விருந்து - சுகுமாரன்
20. தூர் - நா.முத்துக்குமார்
21. ஜென் கவிதைகள்
22. ஹைக்கூ கவிதைகள்

நீங்கள் பயின்ற புதுக்கவிதைகளின் அடிப்படையில் நவீனப் புதுக்கவிதைகள் மற்றும் ஹைக்கூக் கவிதைகள் தருக.

அலகு - 2 சிறுகதைகள்

1. மனித யந்திரம் - புதுமைப்பித்தன்
2. அனந்தசயனம் காலனி - தோப்பில் முகம்மது மீரான்
3. மிருகம் - வண்ணநிலவன்
4. செடிகளுக்கு - வண்ணதாசன்
5. கனவில் உதிர்ந்த பூ - நானும்பூநாதன்
6. சொர்க்கக் கன்னிகை - கருணாமணாளன்
7. நீலம் பூக்கும் திருமடம் - ஜா.தீபா
8. குற்றமும் தண்டனையும் - லியோ டால்ஸ்டாய்

சிறுகதைகள் எழுதப் பயிற்சி அளித்து மாணவரின் சிறுகதையினைக் கல்லூரி ஆண்டு மலரில் இடம்பெறச்செய்தல்.

அலகு 3 அறிவுசார் கட்டுரைகள்

1. தொல்லியல் நோக்கில் உலகத் தமிழர் பண்பாடு
2. ஓங்கி ஒலித்த பெருங்குரல்; ஆத்மாநாம் கவிதைகள்
3. நகுலனின் தனிமை
4. கவிக்கோ அப்துல் ரகுமான் கவிதைகள்
5. இறைவனை நினைப்போம் அன்பினை வளர்ப்போம்
6. சுருக்கம் தேடும் விரிந்த கவிதைகள்
7. இலக்கியத்தில் சுற்றுச்சூழலியல்

நீங்கள் அண்மையில் பயணித்த ஓர் இடம் குறித்து இரசனையோடு எழுதுக.

அலகு 4 இலக்கிய வரலாறு

1. புதுக்கவிதை தோற்றமும் வளர்ச்சியும்
2. நவீனத் தமிழ்க் கவிதைகளின் புதிய போக்குகள்
3. தமிழ்ச் சிறுகதைகளின் தோற்றமும் வளர்ச்சியும்

அலகு 5 இலக்கணம் அறிமுகம்

1. முதலெழுத்துகள்
2. சார்பெழுத்துகள்
3. உயிர் எழுத்தின் வகைகள்
4. மெய் எழுத்தின் வகைகள்
5. சுட்டெழுத்துகள்
6. வினாவெழுத்துகள்
7. வல்லினம் மிகும் இடங்கள்
8. வல்லினம் மிகா இடங்கள்
9. பகுபத உறுப்புகள்
10. இலக்கணக் குறிப்புகள்

நீங்கள் வாசிக்கும் செய்தித்தாள்களில் இடம்பெறும் எழுத்துப் பிழைகளைச் சுட்டிக் காட்டுக.

பாடநூல்கள்

- இக்காலத்தமிழ், தமிழ்த்துறை வெளியீடு, சதக்கத்துல்லாஹ் அப்பா கல்லூரி, திருநெல்வேலி.

பார்வை நூல்கள்

தமிழ் இலக்கிய வரலாறு, முனைவர் சு.ஆனந்தன், கண்மணி பதிப்பகம்,

Course Outcomes:

CO	Upon completion of this course, students will be able to	PSOs Addressed	Cognitive Level
CO-1	Understand the concepts behind modern poetry, short stories, essays, literary history and grammar.	1	Understanding
CO-2	Explain the methodologies for the effective use of language and literature.	1, 2	Applying
CO-3	Apply their knowledge to analyse the socio-political / economic / religious issues presented in the literary texts.	1,2,3,4	Applying
CO-4	Categorize the major literary forms according to their origin and development.	1,2,3	Analysing
CO-5	Assess the ways and means to develop the art of writing insisting on environmental conservation, social harmony and interconnectedness regionally, nationally and globally.	1,2,4,5	Evaluating

Relationship Matrix

Semester	Course Code	Title of the Course				Hours	Credit			
I	21ULTA11	Ikkala Tamil				90	3			
Course Outcomes (COs)	Programme Learning Outcomes (PLOs)					Programme Specific Outcomes (PSOs)				
	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO-1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO-2	✓	✓	✓	✓	✓	✓	✓	✓		
CO-3	✓	✓	✓	✓	✓	✓	✓	✓	✓	
CO-4	✓	✓	✓		✓	✓	✓	✓		
CO-5	✓	✓	✓	✓	✓	✓	✓		✓	✓
	Number of matches (✓) = 43 Relationship = High									

SEMESTER – I

Course Title	BASIC GRAMMAR AND TRANSLATION-I
Total Hrs.	90
Hrs./Week	6
Sub. Code	21ULAR11
Course Type	Part – I - Arabic
Credits	3
Marks	100

General Objective: To teach the basics of Arabic Phonetics, Grammar and Translation.

Course Objectives:

CO	The learners will be able to:
CO-1	Identify the Arabic Alphabet.
CO-2	Understand the speech sounds in Arabic.
CO-3	Explain the basic grammatical items and their uses.
CO-4	Evaluate the strategies for developing communicative competency.
CO-5	Experiment the art of speaking and writing.

Unit I: Arabic for Beginners

Lesson 1-4 (Page No. 1 to 19) The Alphabet, Vowels-Diphthong,
Nunation Doubled consonant, changing shapes of the Alphabet, Definite article

Unit II: Arabic for Beginners

Lesson-5 Parts of Speech Class room (Page No. 20,21)
Model sentences (Page No. 25)
Lesson-6 Noun-Qualified and Adjectives (Page No. 26 &27)
Model sentences (Page No. 32,33)
Lesson-7 Gender (Page No. 34&35)
Lesson-8 Singular, Dual and Plural (Page No. 36&37)
Lesson-9 The Nominal Sentence (Page No. 38&40)
Model sentences (Page No. 44,45)

Unit III: Arabic for Beginners

Lesson-10 The possessive (Page No. 46& 47), Model sentences (Page No.51)

Lesson-11 Personal pronouns, We work (Page No. 52,53 &54)

Model sentences (Page No.58 & 59)

Lesson-12 demonstrative and Relative pronouns, New York city (Page No. 60,61,62,& 67)

Lesson-13 Interrogatives, Conversation (Page No. 68,69 & 70)

Model sentences (Page No.74 & 75)

Unit IV: Al -Qirat –Al-Wazhiha Part –I

Lesson 1-7 from

Unit V: Al -Qirat –Al-Wazhiha Part –I

Lesson 8-14

Textbooks:

1. Syed Ali. *Arabic for Beginners*. UBS Publishers & Distributors Ltd. New Delhi:
(International Edition 2011)
- 2 Waheed Az-zaman Al-Keeranavi. *Al -Qira'ath –Al-Wazhiha Part –I*.

Course Outcomes:

CO	Upon completion of the course, the students will be able to:	PSOs Addressed	Cognitive Level
CO-1	Summarize the Arabic alphabet and speech sounds in Arabic.	1,2	Understanding
CO-2	Apply the basic grammar rules of Arabic in their communication.	1,2,5	Applying
CO-3	Discover the functions of Nouns, Adjectives, Personal and Demonstrative Pronouns, Prepositions, Countable and Uncountable for effective usage.	1,2,3	Applying
CO-4	Analyze the methods in order to attain communication skills.	1,2,3,5	Analyzing
CO-5	Evaluate conversational patterns and write short passages in Arabic.	1,2,4	Evaluating

Relationship Matrix

Semester	Course Code	Title of the Course				Hours	Credits			
I	21ULAR 11	GRAMMAR AND TRANSLATION-I				90	3			
Course Outcomes (COs)	Programme Learning Outcomes (PLOs)					Programme Specific Outcomes (PSOs)				
	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO-1	✓	✓			✓	✓	✓			
CO-2	✓	✓				✓	✓			✓
CO-3	✓	✓	✓	✓		✓	✓	✓		
CO-4	✓	✓		✓		✓	✓	✓		✓
CO-5	✓			✓	✓	✓	✓		✓	
	Number of matches (✓) = 30 Relationship = Medium									

SEMESTER – I

Course Title	COMMUNICATIVE ENGLISH - I
Total Hrs.	90
Hrs./Week	6
Course Code	21ULEN11
Course Type	Part – II - English
Credits	3
Marks	100

General Objective:

To teach the four skills viz. Listening, Speaking, Reading, and Writing to train the students the skills necessary for social and academic interactions.

Course Objectives:

CO	The learners will be able to:
CO-1	Understand the significance and the use of the four skills (LSRW).
CO-2	Apply the skills acquired to listen to English keenly, to understand the context clearly and to respond to others accordingly.
CO-3	Identify the strategies of language learning and use in real-life situations by means of reading extensively.
CO-4	Examine the correct and incorrect expressions in everyday English to take notes and write essays.
CO-5	Express their ideas without committing any grammatical errors.

Unit – I

1. Listening and Speaking
 - a. Introducing self and others
 - b. Listening for specific information
 - c. Pronunciation (without phonetic symbols)
 - i. Essentials of pronunciation
 - ii. American and British pronunciation
2. Reading and Writing
 - a. Reading short articles – newspaper reports / fact based articles
 - i. Skimming and scanning

- ii. Diction and tone
- iii. Identifying topic sentences
- b. Reading Aloud: Reading an article/report
- c. Journal (Diary) Writing

3. Study Skills - 1

Using dictionaries, encyclopedias, thesaurus
Grammar in Context:

Naming and Describing

- Nouns & Pronouns
- Adjectives

Unit – II

1. Listening and Speaking

- a. Listening with a purpose:
- b. Effective Listening:
- c. Tonal Variation:
- d. Listening for information
- e. Asking for Information
- f. Giving Information:

2. Reading and Writing

- a. Strategies of Reading:
 - Skimming and Scanning
- b. Types of Reading:

Extensive and Intensive Reading

- c. Reading a prose passage
- d. Reading a poem
- e. Reading a short story

3. Paragraphs: Structure and types

- a. What is a Paragraph?
- b. Paragraph structure
- c. Topic Sentence
- d. Unity
- e. Coherence.
- f. Connections between Ideas: Using Transitional words and expressions.
- g. Types of Paragraphs

4. Study Skills II:

Using the Internet as a Resource

- a. Online search:
- b. Know the keyword:
- c. Refine your search:
- d. Guidelines for using the Resources:
- e. e-learning resources of Government of India
- f. Terms to know

5. Grammar in Context

Involving Action-I

- a. Verbs
- b. Concord

Unit – III

1. Listening and Speaking

- a. Giving and following instructions
- b. Asking for and giving directions
- c. Continuing discussions with connecting ideas

2. Reading and writing

- a. Reading feature articles (from newspapers and magazines)
- b. Reading to identify point of view and perspective (opinion pieces, editorials etc.)
- c. Descriptive writing – writing a short descriptive essay of two to three paragraphs.

3. Grammar in Context:

Involving Action – II

- Verbals - Gerund, Participle, Infinitive
- Modals

Unit – IV

1. Listening and Speaking

- a. Giving and responding to opinions

2. Reading and writing

- a. Note taking
- b. Narrative writing – writing narrative essays of two to three paragraphs

3. Grammar in Context:

Tense

- Present
- Past
- Future

Unit - V

1. Listening and Speaking
 - a. Participating in a Group Discussion
2. Reading and writing
 - a. Reading diagrammatic information – interpretations maps, graphs and pie charts
 - b. Writing short essays using the language of comparison and contrast
3. Grammar in Context: Voice (showing the relationship between Tense and Voice)

Textbook:

Board of Editors. *COMMUNICATIVE ENGLISH* -1. Tamil Nadu State Council for Higher Education (TANSCH). Chennai: 2020.

References:

1. Radhakrishna Pillai.G,ed.Written English for You.Chennai:Emerald Publishers, 1990 (rpt2008).
2. Nihamathullah.A.et al. A Course in Spoken English.Tirunelveli: MSU, 2005. (rpt 2010).

Course Outcomes

CO No.	Upon completion of this course, students would have learned to:	PLO Addressed	Cognitive Level
CO-1	Understand the importance of language skills in order to communicate effectively.	1,2	Understanding
CO-2	Apply the listening skill to pronounce words better and to understand contextual meaning.	1,2,3	Applying
CO-3	Develop reading skill to learn vocabulary, use it appropriately, and acquire analytical skill and the like.	1,2,3,4	Applying
CO-4	Explain the nuances of common errors in English.	3,4,5	Analyzing
CO-5	Choose to use English language consciously without any errors.	1,2,4,5	Evaluating

Relationship Matrix

Semester	Course Code			Title of the Course			Hours	Credits		
I	21ULEN11			Communicative English - I			90	3		
Course Outcomes (COS)	Programme Learning Outcomes (PLOs)					Programme Specific Outcomes (PSOs)				
	PLO 1	PLO 2	PLO3	PLO4	PLO5	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO-1	✓	✓				✓	✓			
CO-2	✓	✓	✓			✓	✓	✓		
CO-3	✓	✓	✓	✓		✓	✓	✓	✓	
CO-4	✓		✓	✓	✓	✓		✓	✓	✓
CO-5	✓	✓		✓	✓	✓	✓		✓	✓
	Number of matches (✓) = 34 Relationship = High									

SEMESTER – I

Course Title	FUNDAMENTALS OF FOOD SCIENCE
Total Hrs..	60
Hrs./Week	4
Course Code	21UCND11
Course Type	DSC- I
Credits	4
Marks	100

General Objective:

The Course deals with the importance of food and its groups, the nutritional value and different methods of food preparation.

Course Objectives:

CO.	The learners will be able to:
CO-1	Understand the importance of food, food groups in daily life and the link between food and nutrients
CO-2	Apply the various preliminary techniques learned
CO-3	Categorize plant foods, nutritive value and the types of pigments
CO-4	Assess the various methods of cooking.
CO-5	Prepare a range of beverages.

UNIT – I Introduction to Food Science and cooking methods

Definition: Food, Nutrients, Food Science, Nutritional Status, Malnutrition, Under nutrition, over Nutrition, Balanced diet and Health.

Food Groups: Basic four, five, seven, and eleven - Food pyramid - Functions of food – Energy yielding, Body Building and protective foods.

Preliminary techniques: cleaning, cutting, processing, coating, blanching, marinating, fermentation, grinding and filtering.

Cooking Methods: Moist and Dry heat methods of cooking, merits and demerits.

UNIT – II Cereals, Grains and Pulses

Cereals: Rice - composition, milling and parboiling, wheat -Structure, composition & Nutritive value, milling and byproducts

Pulses - Composition and Nutritive value, germination of pulses, advantages of germination, Uses & Role of pulses in cookery.

UNIT III Plant Foods

Vegetables – classification, Composition & Nutritive value, pigments, selection, changes during maturation of Vegetables, Role of vegetables in cookery.

Fruits- classification, Composition & nutritive value, pigments, changes during ripening of fruits, Storage.

UNIT – IV Animal Foods

Milk & Milk Products: Composition and Nutritive value, Different types of milk and Milk products, Role of milk and Milk products in cookery.

Egg: Structure, Composition and Nutritive value, Role of egg in cookery.

Flesh Foods: Meat – Composition & Nutritive value, postmortem changes, methods of cooking meat, Poultry-classification, Composition & Nutritive value, Fish - classification, Nutritive value, selection and fish cookery.

UNIT – V Nuts and Oil seeds, Spices and Condiments

Nuts and Oil seeds: Nutritive value, specific Nuts and Oil seeds, role of nuts and oil seeds in cookery.

Beverages: Classification, types- milk based beverages, fruit beverages, vegetable juices, malted beverages, carbonated, non-alcoholic beverages, alcoholic beverages and miscellaneous beverages.

Spices and Condiments: Definition, role of spices in cookery.

Textbooks:

1. Srilakshmi, B. Food Science. New Age International (P) Ltd, New Delhi: 2001.
2. Srilakshmi, B. Nutrition Science. New Age International (P) Ltd, New Delhi: 2001.

References:

1. Swami Nathan, M. Advanced Text – Book on Food & Nutrition, Bappco, Bangalore. 1985
2. Raheena Begum., Text Book of Food and Nutrition,
3. N. Shakuntala Manay, M. Shadaksharaswamy, Foods Facts and principles, New age International (p) Ltd., Publishers Second Edition, 2001

Course Outcomes

CO.	Upon completion of the course, the students will be able to:	PSOs Addressed	Cognitive level
CO-1	Explain the basics of food science and its classification.	1,2	Understanding
CO-2	Identify the basic principles and processing techniques of cereals and pulses.	1, 2,3,4	Applying
CO-3	Examine the changes in pigments and nutrients loss while cooking vegetables and fruits.	2 & 3	Analyzing
CO-4	Distinguish between the current trends in the production of milk products and animal foods.	2, 3,4,5	Evaluating
CO-5	Prepare malt, milk and fruit based beverages	2,3,4	Creating

Relationship Matrix

Semester	Course Code	Title of the Course					Hours	Credits		
I	21UCND11	FUNDAMENTALS OF FOOD SCIENCE					60	4		
Course Outcomes (COs)	Programme Learning Outcomes (PLOs)					Programme Specific Outcomes (PSOs)				
	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO-1	✓	✓	✓	✓		✓	✓			
CO-2	✓	✓	✓	✓		✓	✓	✓	✓	
CO-3	✓	✓	✓	✓			✓	✓		
CO-4	✓	✓	✓	✓			✓	✓	✓	✓
CO-5	✓	✓	✓	✓			✓	✓	✓	
	Number of matches (✓) = 35 Relationship = High									

SEMESTER – I

Course Title	HUMAN DEVELOPMENT
Total Hrs.	60
Hrs./Week	4
Course Code	21UCND12
Course Type	DSC – II
Credits	4
Marks	100

General Objective:

The course focuses on the physical, psychological and social development of an individual from infancy to old age.

Course Objectives:

CO.	The learner will be able to:
CO-1	Identify the progression from conception to confinement
CO-2	Describe the process of maturation during infancy.
CO-3	Interpret the development of child from 1-12 years.
CO-4	Discover the various developmental changes in adolescence.
CO-5	Evaluate the psychological stress concerned with geriatric care.

Unit I Fundamentals of Growth and Development

Definition, Scope of Human Development in contemporary society- Principles of growth and development- Factors that influence the development- Methods of child study with special emphasis on case study and observation methods.

Unit II Infancy

Infancy -Appearance, size and proportion of newborn- Physical care and daily routine- bathing, clothing and sleeping. Apgar Score - Feeding –natural and artificial- Immunization Schedule

Unit III Early and Late Childhood Period

Early Childhood Period -Physical, motor, emotional, language, moral, social and intellectual development. Accidents and their prevention.

Late Childhood Period -Physical, motor, emotional, language, moral, social and intellectual development. Behavior problems – causes, prevention and treatment, Habit formation.

Unit IV Period of Adolescence

Definition, physical, emotional, intellectual and motor development, personal adjustment and maladjustment. Delinquency – causes, prevention and rehabilitation. Role of Parents and Society.

Unit V Period of Old age

Physical and psychological changes, problems of the aged, family attitude towards aged, place of the aged in Indian Society.

Textbooks:

1. Suriyakanthi. (1978), *Child Development*, New Age Publisher, New Delhi,
2. Rajaammal, P. D, (1980), *Child Development*, New Age Publisher, New Delhi.

References:

1. Breckenridge, M.E. & Vincent, E. L , (1956). *Child Development*, W.B. Saunders & CO., Philadelphia.
2. Hurlock, E.B.(1950), *Child Development*, McGraw Hill Co., New York.
3. Breckenridge, M. Murphy, E, Margaret N , (1958). *Growth and Development of the young child* ,W.D. Saunders & Co., Philadelphia:

Course Outcomes

CO.	Upon completion of the course, the students will be able to:	PSOs Addressed	Cognitive level
CO-1	Understand the biological, psychological and cultural influences of human development.	1	Understanding
CO-2	Determine the progressive process period of infancy.	1,5	Applying
CO-3	Analyze the growth as well as need of the child from childhood adolescence.	1	Analyzing
CO-4	Assess the varied developmental changes during adolescence.	1,5	Evaluating
CO-5	Discuss the collective problems related with geriatric care.	1,5	Creating

Relationship Matrix

Semester	Code		Title of the course			Hours		Credits		
I	21UCND12		Human Development			60		4		
Course Outcomes (COs)	Programme Learning Out Come (POS)					Programme Specific Outcomes (PSOs)				
	PLO 1	PLO2	PLO3	PLO4	PLO5	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO-1	✓	✓	✓			✓				✓
CO-2	✓	✓	✓			✓				
CO-3	✓	✓	✓	✓		✓				
CO-4	✓	✓	✓	✓		✓				✓
CO-5	✓	✓	✓	✓		✓				✓
	Number of matches (✓) = 26 Relationship = Medium									

SEMESTER – I

Course Title	FOOD SCIENCE & HUMAN DEVELOPMENT PRACTICALS
Total Hrs.	30
Hrs./Week	2
Course Code	21UCND1P1
Course Type	PRACTICAL - I
Credits	1
Marks	100/2

General Objective:

- ❖ To help students understand the basics of food preparation and practical phases of Human Development

Course Objectives:

CO.	The learner will be able to:
CO-1	Identify with the methods of cooking
CO-2	Extend the thoughts of preparing innovative recipes
CO-3	Prepare food items to Balwadi school children
CO-4	Recommend recipes prepared using leftovers
CO-5	Develop creative ideas and case study report of preschool children

FOOD SCIENCE

1. Cereals and Pulse cookery

- Preparation of recipes using cereals (Rice, Wheat, Ragi, maize).
- Preparation of recipes using pulses (Green gram, Black Gram, Bengal Gram)

2. Vegetable & Fruit cookery

- Preparation of recipes using different vegetables.
- Preparation of recipes using seasonal fruits.

3. Milk & Egg Cookery

- Preparation of recipes using milk and milk products.
- Preparation of recipes using eggs.

4. Fish & Poultry Cookery

- Preparation of recipes using Fish.
- Preparation of recipes using poultry.

5. Sugar Cookery

- Preparation of desserts.

6. Effective use of leftovers.

7. Preparation of salads, sandwiches, stuffing's and beverages

HUMAN DEVELOPMENT

- 1) **Experiment:** Report on ICDS/Balwadi Visit
- 2) **Experiment:** Report on child counselling in distress
- 3) **Experiment:** Case study of a child with special needs
- 4) **Experiment:** Spending a day in old age home
- 5) **Experiment:** Visit to primary school
- 6) **Experiment:** Compile a drama for importance of Parenting
- 7) **Experiment:** Compile a drama for malnutrition
- 8) **Experiment:** Compile a song for school going child

Course Outcomes

CO.	Upon completion of the course, the students will be able to:	PSOs Addressed	Cognitive level
CO-1	Understand the different methods of cooking foods	1,2,3	Understanding
CO-2	Demonstrate the techniques in food preparation.	2,3,4	Applying
CO-3	Analyze the basics of planning a menu.	1, 2 & 3	Analyzing
CO-4	Evaluate children's psychological problems and present a case study report	2,3,4 &5	Evaluating
CO-5	Compile creative tools to teach children	2, 3& 5	Creating

Relationship Matrix

Semester	Course Code	Title of the Course				Hours	Credit			
I	21UCND1P1	FOOD SCIENCE & HUMAN DEVELOPMENT PRACTICALS				30	1			
Course Outcomes (COs)	Programme Learning Outcomes (PLOs)					Programme Specific Outcomes (PSOs)				
	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO-1	✓	✓	✓	✓		✓	✓	✓		
CO-2	✓	✓	✓	✓			✓	✓	✓	
CO-3	✓	✓	✓	✓		✓	✓	✓		
CO-4	✓	✓	✓	✓			✓	✓	✓	✓
CO-5	✓	✓	✓	✓	✓		✓	✓		✓
	Number of matches (✓) = ...37.... Relationship = High									

SEMESTER – I

Course Title	HUMAN PHYSIOLOGY I
Total Hrs.	60
Hrs./Week	4
Course Code	21UAND11
Course Type	ALLIED I – I/1
Credits	3
Marks	100

General Objective:

To acquire the knowledge about different organs of the human body, its structure and working principles

Course Objectives:

CO.	The learners will be able to:
CO-1	Define the structure, types and functions of cells and tissues
CO-2	Describe the means of respiration in humans
CO-3	Analyze the blood group and Rh factor, composition and functions of circulatory system
CO-4	Enumerate the process of anatomy and physiology of digestive system
CO-5	Classify the nature of urine formation

UNIT – I Cell and Tissues

Cell – types, structure and functions, Tissues– Structure and functions of epithelial, connective, muscular and nervous tissues

UNIT – II Blood and Circulatory System

Blood - Composition, functions, blood groups – Rh factors, blood coagulation

Heart – Structure of heart and blood vessels, structure of artery, vein and capillaries - cardiac cycle and blood circulation

UNIT – III Digestive System

Digestive System – Anatomy, Swallowing - Process of digestion – changes in stomach and small intestine and absorption

UNIT – IV Excretory System

Structure and Functions of Kidney, Cross section of kidney - Structure of Nephron and formation of urine

UNIT – V Respiratory System

Anatomy and Mechanism of Respiration - Gaseous changes in tissues, oxygen transport, CO₂ transport

Textbook:

1. Arumugam N. Human Physiology, Saras Publication. (2016)

References:

1. Ian Peate and Muralitharan Nair. Fundamentals of Anatomy and Physiology for Nursing and Health Care Students. Second Edition. Wiley Black Well ISBN: 9781119130093 .(2016)
2. Indu Khurana. Human Physiology for Dental Students. Second Edition. Elsevier India Private Limited. ISBN: 987-81-312-3323-8.(2013)
3. Jain A K. Human Physiology for BDS. Fifth Edition.(2019)
4. Ramesh Mariya. Fundamentals of Human Physiology. Third Edition. AITBS Publishers.(2019)
5. Ross and Wilson Anatomy and Physiology in Health and Illness. Eleventh Edition. ISBN: 9781119130093 .(2016)

Course Outcomes

CO.	Upon completion of the course, the students will be able to:	PSOs Addressed	Cognitive level
CO-1	List out the functions and role of digestion in man.	1,4,5	Remembering
CO-2	Recall the mechanism of respiration	1,2,5	Remembering
CO-3	Understand the execution and significance of Excretory system.	1,4,5	Understanding
CO-4	Distinguish between various components involved in blood and circulatory system.	1,4,5	Analysing
CO-5	Summarize the physiology of cells and tissues in human anatomy.	1,4,5	Evaluating

Relationship Matrix

Semester	Code		Title of the course			Hours		Credits		
I	21UAND11		HUMAN PHYSIOLOGY I			60		3		
Course Outcomes (COS)	Programme Learning Out Come (PLOS)					Programme Specific Outcomes (PSOs)				
	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO-1	✓	✓	✓	✓		✓			✓	✓
CO-2	✓	✓	✓	✓		✓	✓			✓
CO-3	✓	✓	✓	✓		✓			✓	✓
CO-4	✓	✓	✓	✓		✓			✓	✓
CO-5	✓	✓	✓	✓		✓			✓	✓
	Number of matches (✓) = ...35.... Relationship = High									

SEMESTER – I

Course Title	HUMAN PHYSIOLOGY I PRACTICALS
Total Hrs.	30
Hrs./Week	2
Course Code	21UAND1P1
Course Type	ALLIED PRACTICALS – I/1P
Credits	1
Marks	100/2

Objectives

The course focuses on the structure, organs of the body and identifying methods of blood groups.

Course Objectives:

Co. No.	The learners will be able to:
CO-1	Identify haemoglobin in blood cells
CO-2	Report a microscopic study on different tissues
CO-3	Record levels of haemoglobin and blood pressure using microscope and blood pressure monitor.
CO-4	Distinguish between different types of blood groups
CO-5	Prepare artificial models of Kidney, Heart and Brain

HUMAN PHYSIOLOGY- I PRACTICAL

1. Determination of haemoglobin (ABO blood group)
2. Spotter – Histology of Epithelial tissue
3. Spotter – Histology of muscular tissue
4. Spotter – Histology of connective tissue
5. Spotter – Histology of cartilage tissue
6. Spotter – Histology of nerve tissue
7. Spotter – Sphygmomanometer
8. Spotter – Stethoscope
9. Demonstration of microscope
10. Preparation of models – Kidney, Heart, Brain
11. Demonstration of blood pressure (Rest and exercise)

Course Outcomes

CO.	Upon completion of the course, the students will be able to:	PSOs Addressed	Cognitive level
CO-1	Understand different microscopic slides.	1,2 & 3	Understanding
CO-2	Identify various histological studies by using spotters.	1, 2	Applying
CO-3	Determine the ABO blood groups by themselves.	2 & 3,4	Analyzing
CO-4	Demonstrate the blood pressure during rest and exercise.	2& 3	Evaluating
CO-5	Create models related to various internal organs.	1,2,3	Creating

Relationship Matrix

Semester	Course Code		Title of the Course			Hours		Credit		
I	21UAND1P1		HUMAN PHYSIOLOGY I			30		1		
Course Outcomes (COs)	Programme Learning Outcomes (PLOs)					Programme Specific Outcomes (PSOs)				
	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO-1	✓	✓	✓			✓	✓	✓		
CO-2	✓	✓	✓			✓	✓			
CO-3	✓	✓	✓				✓	✓	✓	
CO-4	✓	✓	✓			✓	✓	✓		
CO-5	✓	✓	✓			✓	✓	✓		
	Number of matches (✓) = ...28.... Relationship = Medium									

SEMESTER – I

Course Title	VALUE EDUCATION-1
Total Hrs.	30
Hrs./Week	2
Course Code	21USVE1A
Course Type	AECC-I
Credits	2
Marks	100

General Objective: To make students inculcate moral values, leading to faith and righteous action in their life.

Unit – I:Islam – Meaning – Importance – A complete Religion – The religion accepted by God – Five Pillars of Islam – Kalima – Prayers – Fasting – Zakat – Haj.

Iman – Monotheism – Angels – Books – Prophets – Dooms Day – Life after death – Heaven and Hell.

Unit – II:Quran – The Book of Allah – Wahi – Revelation to Prophet Muhammad(sal) – Compilation – Preservance – Structure – Content – Purpose – Source of Islamic Law– SuraFathiha, Kafirun, Iqlas, Falakh and Nas.

Unit – III:Hadith – Siha Sitha – Buhari – Muslim – Tirmithi – Abu Dawood – Nasai – Ibn Maja – Collection of Hadith – Meaning of 40 Hadith.

Unit – IV:Life History of Prophet Muhammad (sal) – AiamulJahiliya – Prophet’s Childhood and Marriage – Prophethood – Life at Mecca – Life at Medinah – Farewell Address – Seal of Prophethood.

Unit – V:Good character – Etiquettes – Halal and Haram – Duties towards Allah – Duties towards fellow beings – MasnoonDuas.

Textbooks:

Publication of SadakathullahAppa College

Reference Books:

- 1.V.A. Moahmed Ashrof – Islamic Dimensions – Reflection and Review on Quranic Themes.
- 2.The Presidency of Islamic Researchers – Revised & Edited – The Holy Quran.
- 3.M. ManzoorNomani – Islamic Faith & Practice.
- 4.Ali Nadawi, Abul Hasan– Muhammad Rasulullah.,Muassasathus Sahafawa Nashr publication Lucknow, India,1999.
- 5.K. Ali – A Study of Islamic History.
- 6.Abdul Rahuman Abdulla
h – Islamic Dress code for Women.
- 7.Dr. MunirAhamed Mughal – Code For Believers.
8. Abdul Malik Mujahid – Gems and Jewels.

SEMESTER – I

Course Title	VALUE EDUCATION-II
Total Hrs.	30
Hrs./Week	2
Course Code	21USVE1B
Course Type	AECC-I
Credits	2
Marks	100

UNIT I

Individual Morality – Objective of Moral life – Living in accordance with the code of Morality – the goodness of Morality – Morality and *Thirukural*- The need for faith.

UNIT II

Adherence to higher code of Morality – Fear of God – Good Moral Values – Duty to Parents – Teacher, respecting elders – Moral Etiquettes – Right-minded Principle – High Principles for Proper conduct.

UNIT III

Inculcating good attitudes – Open mindedness – Morale – analysing the pros and cons of good and bad – Service to others – Mind Power, tolerance, respecting others, showing love to others, patience – tranquility – Modesty, kindness and forgiveness.

UNIT IV

Quotations and moral Stories expressing Good characters of Great personalities – Life History of Great people: Mahatma Gandhi, Abraham Lincoln, Dr. A.P.J. Abdul Kalam.

UNIT V

Truth, the importance of uprightness, integrity, friendship – Health awareness on Alcohol and drug abuse – inculcating reading habit – reading good books – Hygiene – Dowry – Corruption.

TEXTBOOKS:

Publication of Sadakathullah Appa College.

SEMESTER – II

Course Title	சமயத்தமிழ் Religious Tamil or Tamil and Religion
Total Hrs.	90
Hrs./Week	6
Course Code	21ULTA21
Course Type	Part – I - Tamil
Credits	3
Marks	100

General Objective: To expose students to the tenets of all the religions.

Course Objectives:

CO	The learners will be able to:
CO-1	Understand religions and their objectives by means of the literary texts prescribed.
CO-2	Classify the tenets, concepts and rituals of various religions.
CO-3	Choose to know about the concept of virtues necessary for society through literature of ethics.
CO-4	Devise strategies to get through competitive exams.
CO-5	Consider focussing on their skill development by gaining confidence.

அலகு – 1**சைவம்**

1. அ. திருஞானசம்பந்தர்
 - தோடுடைய செவியன்...
 - என்ன புண்ணியம் செய்தனை (2.106.1)
 - ஊனத் திருள்நீங் கிட ... (1.38.3)
- ஆ. திருநாவுக்கரசர்
 - மாசில் வீணையும்
 - குனித்த புருவமும் கொவ்வைச் ...
 - புழுவாய்ப் பிறக்கினும்
- இ. சுந்தரமூர்த்தி நாயனார்
 - பித்தா பிறைகுடி
 - பொன்னார் மேனியனே ...
2. மாணிக்கவாசகர்-திருவாசகம்
 - வானாகி மண்ணாகி
- திருவெம்பாவை
 - முன்னைப் பழம்பொருட்கும்
3. திருமூலர்-திருமந்திரம்
 - உள்ளம் பெருங்கோயில்

வைணவம்

4. அ. பொய்கையாழ்வார்
 - பாலன் தனதுருவாய் ஏழுலகுண்டு
- ஆ) பூதத்தாழ்வார்
 - சென்ற திலங்கைமேல்
- இ) பேயாழ்வார்
 - அடைந்த தரவணைமேல் ஐவர்க்காய்...

- ஈ) நம்மாழ்வார் - உண்ணும் சோறு...
 உ) மதுரகவியாழ்வார் - கண்ணி நுண்சிறுத்...
 5. ஆண்டாள்-திருப்பாவை - மார்கழித் திங்கள்...

சமணம்

6. யசோதர காவியம் (கடவுள் வாழ்த்து) - நல்லார் வணங்கப் படுவான்..
 நீலகேசி (கடவுள் வாழ்த்து)

பௌத்தம்

7. மணிமேகலை (பாத்திரம் பெற்ற காதை) - மாரனை வெல்லும் வீரநின் (59-72)

கிறித்தவம்

8. இரட்சணிய யாத்திரிகம் (கடவுள் வாழ்த்து) - 1. மூல காரண முதற்பொருள் ...
 - 2. ஆதி மெய்த்திரு...
 - 3. வானமும், பூமியும்...

இஸ்லாம்

9. உமறுப்புலவர் - அல்லாஹ்
 10. சதாவதானி செய்குதம்பிப் பாவலர் - மாண்டசவம் ஒன்றெடுத்து...
 (நபிகள் நாயக மான்மிய மஞ்சரி) - ஒன்று தெய்வம் ஒன்று மதம்....

இரகுமான் கண்ணி

11. குணங்குடி மஸ்தான் சாகிபு 1) ஈறும் முதலுமற்றே இயங்குகின்ற முச்சுடராய்க்
 காணிக்கை வைத்தேனென் கண்ணே றகுமானே-2
 2) ஏகப் பெருவெளியில் இருட்கடலிற் கம்பமற்ற
 காகமது வானேன் கண்ணே றகுமானே - 7
 3) வேட்டை பெரிதென்றே வெறிநாயைக் கைப்பிடித்து
 காட்டிற் புகலாமோ கண்ணே றகுமானே - 22
 4) இன்றுள்ளோர் நாளைக் கிருப்பதுபொய்
 யென்பதையான் கண்டுகொண்டேன் ஐயாவென்
 கண்ணே றகுமானே - 37
 5) எட்டிப் பிடிக்கும் இதமறிந்தா லுன்பதத்தைக்
 கட்டிப் பிடித்திடுவேன் கண்ணே றகுமானே - 49
 12. ஞானமாமேதை தக்கலை பீர்முகம்மது அப்பா - அலைகடலும் அம்புலியும்....
 - பொல்லாக்குபிர்களும் வருங்....
 13. இறையருட்கவிமணி பேராசிரியர்
 கா.அப்துல்கபூர் - அலகிலா அருளும் அளிவிலா..

நீதி இலக்கியம்

14. திருக்குறள் - உழவு (1031-1040)
 15. நாலடியார் - கல்வி கரையில் கற்பவர் நாள்சில... 135
 16. நான்மணிக்கடிகை - நாற்றம் உரைக்கும் மலர்.... 45

அலகு - 2

புதினம்

வாடிவாசல் - சி.சு. செல்லப்பா, காலச்சுவடு, நாகர்கோவில்

அலகு – 3

உரைநடை

(போட்டித் தேர்வுகளுக்குக் கட்டுரை எழுதும் பயிற்சி)

1. நபிகள் நாயகம் (ஸல்) அன்பின் தாயகம்
2. சதக்கத்துல்லாஹ் அப்பா அவர்களின் வாழ்வும் பணியும்
3. பண்பெனப்படுவது பாடறிந்து ஒழுகுதல்
4. நம்பிக்கையோடிருப்போம்
5. தமிழின் தொன்மையும் சிறப்பும்
6. தடம் பதித்த தமிழ் நாவலாசிரியர்கள்

அலகு – 4

இலக்கிய வரலாறு

(போட்டித் தேர்வுத் தயாரிப்பு)

1. சைவம், வைணவம், கிறித்தவம், இசுலாம், வளர்த்த தமிழ்
2. புகழ்பெற்ற தமிழ் நூல்கள், நூலாசிரியர்கள்
3. சாகித்ய அகாதெமி விருது பெற்ற படைப்புகள்

அலகு – 5

தமிழ்நாடு அரசுப் பணியாளர் தேர்வாணையம் நடத்தும் போட்டித் தேர்வுக்குரிய

பொதுத்தமிழ் இலக்கணப் பகுதி ஓர் அறிமுகம்

1. வேர்ச்சொல்லைக் கண்டறிதல்
2. பெயரெச்சம், வினையெச்சம், முற்றெச்சம் பற்றி அறிதல்
3. வினைமுற்று, ஏவல் வினைமுற்று அறிதல்
4. வியங்கோள் வினைமுற்று, வினையாலணையும் பெயர்
5. வினைத்தொகை, பண்புத்தொகை அறிதல்
6. உவமைத்தொகை, உம்மைத் தொகை அறிதல்
7. வேற்றுமைத் தொகையைக் கண்டறிதல்
8. அன்மொழித் தொகையைக் கண்டறிதல்
9. இரட்டைக்கிளவி, அடுக்குத்தொடர் அறிதல்

பாடநூல்:

சமயத்தமிழ், சதக்கத்துல்லாஹ் அப்பா கல்லூரித் தமிழ்த்துறை வெளியீடு,

பார்வை நூல்

சமயம் வளர்த்த தமிழ், வேங்கடசாமி நாட்டார், பாவைப் பதிப்பகம், சென்னை

Course Outcomes:

CO	Upon completion of this course, students will be able to	PSOs Addressed	Cognitive Level
CO-1	Understand the doctrines, divine thoughts and virtues of the various religions.	1,3,4,5	Understanding
CO-2	Develop impeccable spoken and written language ability.	1,4,5	Applying
CO-3	Choose to improve their confidence and the nuances of governance by reading the history of great personalities.	1,4	Applying
CO-4	Explain the ancient Tamil people's life history.	3,4,5	Analyzing
CO-5	Summarize great literary works and to get substance from them to attract employment opportunities.	1,2	Evaluating

Relationship Matrix

Semester	Course Code	Title of the Course				Hours	Credit				
II	21ULTA21	சமயத்தமிழ்				90	3				
Course Outcomes (COs)	Programme Learning Outcomes (PLOs)					Programme Specific Outcomes (PSOs)					
	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	
CO-1	✓	✓	✓	✓		✓		✓	✓	✓	
CO-2	✓	✓	✓			✓			✓	✓	
CO-3	✓	✓	✓	✓	✓	✓			✓		
CO-4	✓	✓	✓					✓	✓	✓	
CO-5	✓	✓				✓	✓				
	Number of matches (✓) = 31 Relationship = Medium										

SEMESTER – II

Course Title	BASIC GRAMMAR AND TRANSLATION-II
Total Hrs.	90
Hrs./Week	6
Sub. Code	21ULAR21
Course Type	Part – I - Arabic
Credits	3
Marks	100

General Objective: To make the students develop the intermediate Arabic Grammar and Translation skills.

Course Objectives:

CO	The learners will be able to:
CO-1	Understand the parts of speech of Arabic to comprehend text books in terms of the sentences given.
CO-2	Differentiate the conjugations of verbs in Arabic.
CO-3	Explain the various predicates in Arabic sentences.
CO-4	Illustrate the morphology in Arabic grammar.
CO-5	Analyze nominal sentences in Arabic.

Unit I: Arabic for Beginners

Lesson-14 Prepositions, The village (Page No. 76& 77)

Lesson-15 Verbal sentence – The past tense (Page No. 82 to 87)

Lesson-16 The Imperfect tense- The River Nile (Page No. 93 to 97)

Lesson-17 The Imperative and Negative command (Page No. 102 to 104)

Unit II: Al -Qirat –Al-Wazhiha Part –I

Lesson 15-21

Unit III: Arabic for Beginners

Lesson-20 The verbs of Incomplete predicate (Page No. 126 to 130)

Lesson-21 Inna and its categories, the banks (Page No. 136,137)

Lesson-22 the Numerals, Days and months (Page No. 144 to 148)

Lesson-24 اسم التفضيل (Page No. 151)

Unit IV: Al -Qirat –Al-Wazhiha Part –I

Lesson 22-28

Unit V: Al -Qirat –Al-Wazhiha Part –I

Lesson 29-35

Text and Reference books

1) Arabic for Beginners (selected topics only)

By Dr. Syed Ali (Former HOD of Arabic, The New College, Chennai.

(UBS Publishers & Distributors Ltd) 5, Ansari Road, New Delhi -110 002.

2) Al -Qirat –Al-Wazhiha Part –I, From Lesson 15 to 35 only.

by Waheed Az-zaman Al-Keeranavi.

Available at: Al-Manar Book Depot, Mannarpuram, Trichy-20.

Course Outcomes

CO	Upon completion of the course, the students will be able to	PSOs Addressed	Cognitive Level
CO-1	Understand the intermediate Arabic grammar.	1,2,3	Understanding
CO-2	Apply the functions of verbs such as the past tense, the imperfect tense etc. in sentences.	1,2,4	Applying
CO-3	Produce sentences in Arabic with the grammar rules.	1,4,5	Applying
CO-4	Categorize the different particles in Arabic.	1,2,3	Analyzing
CO-5	Find errors in Arabic sentences with the rules of grammar and translate Arabic texts.	1,4,5	Evaluating

Relationship Matrix

Semester	Course Code	Title of the Course				Hours	Credits			
II	21ULAR 21	BASIC GRAMMAR AND TRANSLATION-II				90	3			
Course Outcomes (COs)	Programme Learning Outcomes (PLOs)					Programme Specific Outcomes (PSOs)				
	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO-1	✓	✓	✓	✓	✓	✓	✓	✓		
CO-2	✓	✓	✓	✓		✓	✓		✓	
CO-3	✓	✓	✓			✓			✓	✓
CO-4	✓		✓	✓	✓	✓	✓	✓		
CO-5		✓			✓	✓			✓	✓
	Number of matches = 33 Relationship = Medium									

SEMESTER – II

Course Title	COMMUNICATIVE ENGLISH - II
Total Hrs.	90
Hrs./Week	6
Course Code	21ULEN21
Course Type	Part – II - English
Credits	3
Marks	100

General Objective:

To teach students the four skills viz. Listening, Speaking, Reading, and Writing and to impart language skills through basic grammatical categories.

Course Objectives:

CO	The learners will be able to:
CO-1	Understand the importance of real-life situations, as responding to complaints and to use language effectively.
CO-2	Generalize the nuances and methods of giving short speeches, proposing welcome address and vote of thanks and the like.
CO-3	Associate themselves with learning to give short presentations, formal presentations and writing e-mails.
CO-4	Apply their knowledge in writing sentences with grammatical order, writing brochure and understanding texts in context.
CO-5	Develop their knowledge and skills to use clauses and collocations appropriately in spoken and written contexts.

Unit – I

Listening and Speaking

- Listening and Responding to Complaints (formal situation)
- Listening to Problems and Offering Solutions (informal)

Reading and Writing

- Reading Aloud (brief motivational anecdotes)
- Writing a Paragraph on a Proverbial Expression / Motivational Idea

Word Power / Vocabulary

- Synonyms and Antonyms

Grammar in Context

- Adverbs
- Prepositions

Unit – II

Listening and Speaking

a. Listening to Famous Speeches and Poems

b. Making Short Speeches – Formal:

Welcome Speech and Vote of Thanks.

Informal Occasions – Farewell Party, Graduation Speech

Reading and Writing

a. Writing Opinion Pieces (could be on travel, food, film / book reviews

or on any contemporary topic)

b. Reading Poetry

i. Reading Aloud: (Intonation and Voice Modulation)

ii. Identifying and using figures of speech-simile, metaphor, personification etc.

Word Power

a. Idioms and Phrases

Grammar in Context

Conjunctions and interjections

Unit – III

Listening and Speaking

a. Listening to Ted Talks

b. Making Short Presentations – Formal Presentation with PPT,

Analytical Presentation of Graphs and Reports of Multiple Kinds

c. Interactions during and after the Presentations

Reading and Writing

a. Writing Emails of Complaint

b. Reading Aloud Famous Speeches

Word Power

- a. One word Substitution

Grammar in Context:

- Sentence Patterns

Unit – IV**Listening and Speaking**

- a. Participating in a Meeting: face to face and online
- b. Listening with Courtesy and adding ideas and giving opinions during the meeting and making concluding remarks

Reading and Writing

- a. Reading Visual Texts - Advertisements
- b. Writing a Brochure

Word Power

- a. Denotation and Connotation

Grammar in Context:

- Sentence Types

Unit - V**Listening and Speaking**

- a. Informal Interview for Feature Writing
- b. Listening and Responding to Questions at a Formal Interview

Reading and Writing

- a. Writing Letters of Application
- b. Reader's Theatre (Script Reading)
- c. Dramatizing Everyday Situations / Social issues through Skits. (writing scripts and performing)

Word Power

- a. Collocation

Grammar in Context:

- Working with Clause

Textbook:

COMMUNICATIVE ENGLISH-II. Tamil Nadu State Council for Higher Education (TANSCH).2020.

References:

1. Radhakrishna Pillai.G,ed.Written English for You.Chennai: Emerald Publishers,1990 (rpt2008).
2. Nihamathullah.A.et al. A Course in Spoken English, Tirunelveli: MSU,2005. (rpt 2010).

Course Outcomes

CO No.	Upon completion of this course, students will be able to:	PLO Addressed	Cognitive Level
CO-1	Distinguish the various real life situations to use language accordingly.	1,2	Understanding
CO-2	Experiment giving short speeches, welcome address, vote of thanks in programmes and functions organised.	1,2,3	Applying
CO-3	Write e-mails and give short presentations, formal presentations using the English language.	1,2,3,4	Applying
CO-4	Order sentences with its basic units and to prepare brochures etc.	1,2,3,4	Analyzing
CO-5	Find errors in the correct use of collocations and clauses in everyday spoken and written communication.	1,2,3,4,5	Evaluating

Relationship Matrix

Semester	Course Code	Title of the Course				Hours	Credits			
II	21ULEN21	COMMUNICATIVE ENGLISH - II				90	3			
Course Outcomes (COS)	Programme Learning Outcomes (PLOs)					Programme Specific Outcomes (PSOs)				
	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO-1	✓	✓				✓	✓			
CO-2	✓	✓	✓			✓	✓	✓		
CO-3	✓	✓	✓	✓		✓		✓	✓	
CO-4	✓	✓	✓	✓		✓		✓	✓	
CO-5	✓	✓	✓	✓	✓	✓		✓	✓	✓
	Number of matches (✓) = ...36.... Relationship = High									

Semester – II

Course Title	PRINCIPLES OF NUTRITION
Total Hrs.	60
Hrs./Week	4
Course Code	21UCND21
Course Type	DSC-III
Credits	4
Marks	100

General Objective:

The course aims at the significance of nutrition in the maintenance of good health and examines on nutrition deficiencies and guides with methods of prevention.

Course Objectives:

CO.	The learners will be able to:
CO-1	Examine the energy value of different foods.
CO-2	Observe the importance of Macronutrients and Micronutrients in human diet.
CO-3	Observe the importance of Micronutrients in human diet.
CO-4	Evaluate the nutritional deficiencies and their prevention.
CO-5	Design the food sources and requirements of different nutrients.

UNIT I – Energy

Definition – Direct and indirect calorimetric methods - Determination of energy value of foods, Bomb calorimeter and specific dynamic action of food.

BMR, factors affecting BMR, Determination of energy metabolism – Max- Planck Respirometer.

UNIT II - Macro Nutrients

Carbohydrates-Classification, functions, Digestion, absorption, sources, and requirements of carbohydrates.

Protein – Classification, functions, Digestion, absorption, sources and requirements of proteins and deficiency -PEM

Lipids - classification, functions, sources and requirements of lipids, and role of EFA.

UNIT III - Micro Nutrients – Vitamins

Water soluble vitamins- C and B complex (B₁, B₂, B₃, B₆, B₉ and B₁₂) functions, sources, requirements and effects of deficiency.

Fat soluble vitamins - A, D, E, K functions, sources, requirements and effects of deficiency.

UNIT IV - Micro Nutrients - Minerals

Minerals – functions, sources, requirements and deficiency of Calcium, Phosphorus, Iron, Sodium, Potassium and Magnesium.

Importance of trace elements – Copper, Cobalt, Iodine, Selenium, Fluorine and Zinc.

UNIT V - Fiber and water

Role of fibre – functions, importance, requirements, high fibre diet.

Water – Functions, water balance, dehydration, intoxication.

Textbooks:

1. Swaminathan, M. Essentials of foods and nutrition, volume I&II, Ganesh and Co., 2003.
2. Srilakshmi.B. Nutrition Science, New Age International Publishers, 2016.

References:

1. Krause's Food, Nutrition and Diet therapy, W.B. Saunder's, 14th edition 2014.
2. Dr.M. Swaminthan, Advanced Text-Book on Food and Nutrition, Bappco Publications.
3. Seema Yadav, Basic Principles of Nutrition, Ammol Publication Pvt. Ltd. First Edition.
4. MahtabBamji, PralhapRao.R and Vinodhini, Text book of human Nutrition, Oxford and IBH publishing Co.Pvt. New Delhi.

Course Outcomes

CO.	Upon completion of the course, the students will be able to:	PSOs Addressed	Cognitive level
CO-1	Discuss the various methods of energy determination.	1,3	Understanding
CO-2	Explain the types and role of macro nutrients.	1, 2,3	Applying
CO-3	Evaluate the functions, sources and requirements of vitamins.	2 & 3	Analyzing
CO-4	Summarize the importance of minerals and trace elements.	2& 3	Evaluating
CO-5	Validate the essential role of fibre and water.	1,2,3	Creating

Relationship Matrix

Semester	Course Code		Title of the Course			Hours		Credits		
II	21UCND21		Principles of Nutrition			60		4		
Course Outcomes (COs)	Programme Learning Outcomes (PLOs)					Programme Specific Outcomes (PSOs)				
	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO-1	✓	✓	✓	✓		✓	✓	✓	✓	
CO-2	✓	✓	✓	✓		✓	✓	✓	✓	
CO-3	✓	✓	✓	✓		✓	✓	✓	✓	
CO-4	✓	✓	✓	✓		✓	✓	✓	✓	
CO-5	✓	✓	✓	✓		✓	✓	✓	✓	
	Number of matches (✓) = ...40.... Relationship = High									

SEMESTER – II

Course Title	FOOD CHEMISTRY
Total Hrs.	60
Hrs./Week	4
Course Code	21UCND22
Course Type	DSC - IV
Credits	4
Marks	100

General Objective:

The course aims at the chemical reaction of foods, role of each chemical component and their interaction.

Course Objectives:

CO.	The learners will be able to:
CO-1	Understand the chemical properties and reactions of food items.
CO-2	Categorize the properties and chemical changes in lipids
CO-3	Illustrate the structure and enzymatic reactions of proteins in food
CO-4	Explain different types of colloids in food and effect of plant pigments while cooking
CO-5	Assess the properties as well as functional role of Vitamins and minerals in foods

UNIT – I Carbohydrates:

Monosaccharide (Glucose, Fructose and Galactose) - Structure - Physical and Chemical properties - functional role of monosaccharide

Disaccharides (Sucrose, Lactose and Maltose) - Structure - Physical and Chemical properties - functional role of disaccharides

Polysaccharides (Starch, Glycogen, Cellulose and Chitin) - Structure - Physical and Chemical properties - functional role of polysaccharides

UNIT - II Proteins:

Proteins – Structure (Primary, Secondary, Tertiary and Quaternary) -Physical and Chemical Properties - functional role of proteins - Denaturation of proteins – Enzymatic and Non enzymatic browning Reactions – types.

UNIT- III Lipids

Lipids – Structure - Physical and Chemical properties - Functional role of lipids in foods Rancidity in foods - types - prevention of rancidity.

UNIT -IV Vitamins and Minerals

Vitamins (Fat Soluble Vitamins A, D, E, K - Water Soluble Vitamins B₁ B₂ B₃ B₅ B₆ B₉ B₁₂ and Vitamin C) - Physical and Chemical Properties - functional role of vitamins in foods.

Minerals - Major Minerals (Calcium, Sodium, Potassium, Phosphorous, Magnesium) - Minor Minerals (Iron, Iodine, Manganese) Trace Minerals (Copper, Zinc, Selenium) - Physical and Chemical Properties - functional role of minerals in foods.

UNIT - V Colloidal Chemistry

Colloids – Definition - Types - Properties - Applications

Emulsion – Definition - Types - Properties - Emulsifying agents - Uses
 Sols - Definition - Types - Lyophilic - Lyophobic sols -Properties
 Plant Pigments-Chlorophyll - Carotenoids - Anthocyanins - Anthoxanthin - Myoglobin -
 Effect of changes in cooking of different pigments

Textbooks:

1. Ramani Alex. V. Food Chemistry. MJP Publishers. ISBN: 9788180940613.(2005)
2. Belitz H.D., Grosch W., Schieberlo. P., Food Chemistry. 4th revised edition. Springer. ISBN: 978-3-540-69933-0. (2009)

References:

1. Christos Ritzoulis. Introduction to Physical of Foods. CRC Press Taylor and Francis Group. New York.(2013)
2. Coulate. T.P. Food the chemistry of its components. 5th Edition. RSC Publishing. ISBN:978-0-85404-111-4 .(2006)
3. Meyer L. Food Chemistry. CBS Publishers and Distributors. ISBN: 9788123911496. (2006)
4. Thapar Hema. Food Chemistry. Pacific Books International Publishers. ISBN:9789380472201.(2006).

Course Outcomes

CO.	Upon completion of the course, the students will be able to:	PSOs Addressed	Cognitive level
CO-1	Identify the structure and properties of carbohydrates in food components.	1,4,5	Remembering
CO-2	Describe the browning reactions in food.	2,4,5	Understanding
CO-3	Interpret the functional role of lipids in food.	2,3,4	Applying
CO-4	Summarize the types and importance of vitamins and minerals in human functioning.	2,4,5	Analysing
CO-5	Estimate the mechanism of colloidal chemistry in food components.	3,5	Evaluating

Relationship Matrix

Semester	Course Code		Title of the Course			Hours		Credits		
II	21UCND22		Food Chemistry			60		4		
Course Outcomes (COs)	Programme Learning Outcomes (PLOs)					Programme Specific Outcomes (PSOs)				
	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO-1	✓	✓	✓			✓			✓	✓
CO-2	✓	✓	✓				✓		✓	✓
CO-3	✓	✓	✓				✓	✓	✓	
CO-4	✓	✓	✓				✓		✓	✓
CO-5	✓	✓	✓					✓		✓
	Number of matches (✓) = 29					Relationship = Medium				

SEMESTER – II

Course Title	PRINCIPLES OF NUTRITION AND FOOD CHEMISTRY PRACTICALS
Total Hrs.	30
Hrs./Week	2
Course Code	21UCND2P1
Course Type	PRACTICAL – II
Credits	1
Marks	100/2

General Objective:

The course covers the chemical properties and quality of the nutrients in food components

Course Objectives:

CO No.	The learners will be able to:
CO-1	Describe the basic principles and properties of nutrients
CO-2	Illustrate the chemistry of starch, proteins and vitamins
CO-3	Examine the effect of plant pigments on cooking
CO-4	Evaluate the nutrients qualitatively and quantitatively
CO-5	Assess the quality of water

FOOD CHEMISTRY

1. Chemistry of Starch and Sugars - Gelatinization of Starch - Retrogradation and Syneresis,
2. Microscopic Examination of uncooked and gelatinized Starch,
3. Scum formation in milk - Enzymatic Browning and methods of prevention
4. Estimation of saponification value
5. Demonstration of effects of cooking on plant pigments

PRINCIPLES OF NUTRITION

1. Qualitative estimation of Carbohydrate
2. Qualitative estimation of protein
3. Quantitative estimation of reducing sugar in fruits juices
4. Quantitative Estimation of vitamin C in orange juice
5. Quantitative estimation of Vitamin C in green chilli
6. Observation of water quality.

Course Outcomes

CO.	Upon completion of the course, the students will be able to:	PSOs Addressed	Cognitive level
CO-1	Define the chemical process of starch and proteins	1,2,3	Remembering
CO-2	Identify the saponification value in fats	1,2,3	Understanding
CO-3	Discover the presence of Carbohydrates and proteins	1,2,3	Applying
CO-4	Judge the quantity of vitamin C present in orange, green chillies, to prevent deficiencies.	1,2,5	Evaluating
CO-5	Report the quality testing of water.	1,2,5	Creating

Relationship Matrix

Relationship Matrix										
Semester	Course Code	Title of the Course				Hours	Credit			
II	21UCND2P1	Food Chemistry & Principles of Nutrition Practicals				30	1			
Course Outcomes (COs)	Programme Learning Outcomes (PLOs)					Programme Specific Outcomes (PSOs)				
	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO-1	✓	✓	✓			✓	✓	✓		
CO-2	✓	✓	✓			✓	✓	✓		
CO-3	✓	✓	✓			✓	✓	✓		
CO-4	✓	✓	✓			✓	✓			✓
CO-5	✓	✓	✓			✓	✓			✓
	Number of matches (✓) = 30 Relationship = Medium									

SEMESTER – II

Course Title	HUMAN PHYSIOLOGY II
Total Hrs.	60
Hrs./Week	4
Course Code	21UAND21
Course Type	ALLIED - I/2
Credits	3
Marks	100

Objectives

This course focuses on the anatomy, structure & functions of human body.

Course Objectives:

CO.	The learners will be able to:
CO-1	Identify the Anatomy and Physiology of Reproductive System
CO-2	Describe the structure and function of Spinal Cord and Autonomic Nervous System
CO-3	Illustrate the structure and function of Brain
CO-4	Determine the function of Sensory Organs
CO-5	Assess the structure and function of Endocrine System

UNIT – I - Reproductive System

Anatomy and Physiology of Male reproductive system – Spermatogenesis, Spermatozoan, Transportation of sperm, Semen and Female reproductive system – Ovary & Ovum Menstrual cycle, Process of Pregnancy.

UNIT – II -Endocrine System

Structure, Functions of Pituitary gland – GH, TSH, ACTH, FSH, LH, LTH, MSH, Vasopressin and Oxytocin, Thyroid gland – Thyroxine, Tri – iodothyronine, Calcitonin, Hypothyroidism - Cretinism, Myoedema and Hyperthyroidism - Exophthalmic Goitre Parathyroid gland and Adrenal gland – Addison's disease and Cushing's syndrome Structure, Functions of Islets of Langerhans and Sex gland

UNIT – III - Nervous System

Brain – Structure and Functions of Cerebrum, Cerebellum
Structure and Functions of Thalamus, Hypothalamus, Mid brain, medulla Oblongata and Pons

UNIT – IV - Spinal Cord and Autonomic Nervous System

Spinal Cord – Structure, functions, reflex action reflex arch
Autonomic nervous system – Sympathetic and Parasympathetic nervous system

UNIT – V – Sensory Organs

Eye - Structure and Functions
Ear - Structure and Functions
Skin - Structure and Functions

Textbooks:

1. Dr. N. Arumugam., Human Physiology, Saras Publication, 2016
2. Evelyn C. Pearce with new illustrations by Audrey Besterman, Anatomy and Physiology for Nurses, Jaypee Brothers, 16th Edition.

Reference Books:

1. Indu Khurana. Human Physiology for Dental Students. Second Edition. Elsevier India Private Limited. ISBN: 987-81-312-3323-8.(2013)
2. Jain A K. Human Physiology for BDS. Fifth Edition.(2019)
3. Ramesh Mariya. Fundamentals of Human Physiology. Third Edition. AITBS Publishers.(2019)
4. Ross and Wilson Anatomy and Physiology in Health and Illness. Eleventh Edition. ISBN: 9781119130093 .(2016)

Course Outcomes

CO.	Upon completion of the course, the students will be able to:	PSOs Addressed	Cognitive level
CO-1	List out the various modules of autonomic nervous system.	1	Remembering
CO-2	Understand the interactions of organ systems with external stimuli.	1, 2	Understanding
CO-3	Explain the various components involved in reproductive system.	2 & 3	Applying
CO-4	Illustrate the importance of the nervous functioning system in human body.	2& 3	Analyzing
CO-5	Distinguish between the role and functions of endocrine system.	3	Evaluating

Relationship Matrix

Semester	Course Code	Title of the Course				Hours	Credits			
II	21UAND21	HUMAN PHYSIOLOGY II				60	3			
Course Outcomes (COs)	Programme Learning Outcomes (PLOs)					Programme Specific Outcomes (PSOs)				
	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO-1	✓	✓	✓	✓		✓	✓	✓		
CO-2	✓	✓	✓	✓		✓	✓	✓	✓	
CO-3	✓	✓	✓	✓		✓	✓	✓	✓	
CO-4	✓	✓	✓	✓	✓	✓	✓	✓	✓	
CO-5	✓	✓	✓	✓	✓	✓	✓	✓	✓	
	Number of matches (✓) = ...41.... Relationship = High									

SEMESTER – II

Course Title	HUMAN PHYSIOLOGY II PRACTICALS
Total Hrs.	30
Hrs./Week	2
Course Code	21UAND2P1
Course Type	ALLIED I /2P
Credits	1
Marks	100/2

Objectives

This course aims at the method of identifying hemoglobin level.

Course Objectives:

CO.	The learners will be able to:
CO-1	List out the equipments to analyze haemoglobin
CO-2	Differentiate among various systems in the body
CO-3	Examine the level of haemoglobin in a body
CO-4	Analyze the pH activity of salivary amylase.
CO-5	Preparing models of different systems in a body.

1. Estimation of Hemoglobin
2. Spotter – Heart
3. Spotter – pH meter
4. Spotter – brain
5. Spotter – sperm
6. Spotter – pancreas
7. Spotter – haemoglobinometer
8. Spotter – haemocytometer
9. Preparation of models – digestive system, reproductive system, respiratory system, nervous system, excretory system.
10. Preparation of model – eye, ear
11. Effect of different pH on activity of salivary amylase on starch

Course Outcomes

CO.	Upon completion of the course, the students will be able to:	PSOs Addressed	Cognitive level
CO-1	Identify the level of haemoglobin to assess the various types of anaemia.	1,2,3,4	Remembering
CO-2	Interpret various pathological studies.	1, 2,3	Understanding
CO-3	Employ different experiments used in haematological studies.	1,2,3,4,5	Applying
CO-4	Evaluate the different pH activity of salivary amylase.	2, 3.4	Evaluating
CO-5	Create models related to various b functioning systems.	2,3,4	Creating

Relationship Matrix

Semester	Course Code		Title of the Course			Hours	Credit			
II	21UAND2P1		HUMAN PHYSIOLOGY II PRACTICAL			30	1			
Course Outcomes (COs)	Programme Learning Outcomes (PLOs)					Programme Specific Outcomes (PSOs)				
	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO-1	✓	✓	✓	✓		✓	✓	✓	✓	
CO-2	✓	✓	✓	✓		✓	✓	✓		
CO-3	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO-4	✓	✓	✓	✓			✓	✓	✓	
CO-5	✓	✓	✓	✓			✓	✓	✓	
	Number of matches (✓) = ...39.... Relationship = High									

SEMESTER – II

Course Title	ENVIRONMENTAL SCIENCE
Total Hrs.	30
Hrs./Week	2
Course Code	21UEVS21
Course Type	AECC-II
Credits	2
Marks	100

UNIT - I: Nature of Environmental Studies

Goals, Objectives and guiding principles of environmental studies.
Towards sustainable development - Environmental segments-
Atmosphere, Hydrosphere, Lithosphere, Biosphere – definition. Pollution
episodes -- Hiroshima – Nagasaki, - Bhopal gas Tragedy, Fukushima.
Stone leprosy in Taj Mahal, Minamata disease.

UNIT - II: Natural Resources

Renewable and Non-Renewable resources - classification.

- Forest resources: Use and over - exploitation, Afforestation and deforestation.
- Water resources: Use and over - utilization and conservation of surface and ground water – Rain harvesting.
- Marine Resources: Fisheries and Coral reefs.
- Mineral resources: Use and exploitation - environmental impacts of extracting and using mineral resources.
- Food resources: Effects of modern agriculture fertilizers - pesticide problem.
- Energy resources: Growing energy needs - use of alternate energy source - Solar cells & wind mills.
- Land resources: Land degradation

UNIT - III: Ecosystem

- Concept of Eco-systems - Tropic level, food chains, food web and Ecological pyramids, Living conditions on other planets (Brief account). Types, structure & Functions, prevention and control of pollution of the following:

- a) Aquatic ecosystem
- b) Terrestrial ecosystem – Grassland, Forest and Desert ecosystem

UNIT - IV: Biodiversity & Its Conservation

Introduction - Definition: ecosystem diversity, species diversity and Genetic diversity. Hot spots of biodiversity - Western Ghats, Eastern Himalayas and Gulf of Mannar. Threats to biodiversity - Habitat Loss, Poaching of wildlife and Man - wildlife conflicts. Nature reserves. Conservation of biodiversity: In-situ and Ex-situ, Environmental movements – Green peace and Chipco movement. Biodiversity law.

UNIT - V: Environmental protection, Policies and practices

Climate change, global warming, ozone layer depletion, acid rain and impacts on human communities and agriculture.

Prevention, Control of Pollution and Environmental Laws:

- Water, Air and Noise (prevention & Control of Pollution) Act.
- Environmental Protection Act.
- Wildlife production Act, Forest Conservation Act, International agreements, Monstreal and Kyoto protocols and conservation on biological Diversity. The Chemical Weapons Convention (CWC)
- Role of Central & State Pollution Control Boards.

Field work : 5 marks

Visit to an area to document environmental assets: river/ forest / fauna.

or

Visit to a local polluted site-urban/rural/Industrial / Agricultural

or

Study of common plants, insects, birds and basic principles of identification

REFERENCE BOOKS:

1. Basic of Environmental Science. Vijayalakhmi, Murugesan and Sukumaran – Manonmaniam Sundaranar University publications.
2. Environmental Studies. John de Brito, Victor, Narayanan and Patric Raja - published by St. Xavier's College, Palayamkottai, 2008.
3. Environmental Science and Biotechnology. A.G. Murugesan and C. Raja Kumar - MJP Publishers.
4. Fundamental of Environmental pollution - Krishnan Kannan - Chand & Company Ltd., New Delhi, 1997.
5. Environmental Studies. S. Muthiah, Ramalakshmi publications, Tirunelveli.
6. EnRole of central and state pollution control boards. Environmental Studies. V.M. Selvaraj, Bavani Publications, Tirunelveli.

SEMESTER – III

Course Title	பயன்பாட்டுத் தமிழ் (Payanpattu Tamil)
Total Hrs.	90
Hrs./Week	6
Course Code	21ULTA31
Course Type	Part – I - Tamil
Credits	3
Marks	100

General Objective: To teach the Sangam literature.

Course Objectives:

CO	The learners will be able to:
CO-1	Understand Sangam Tamil through the texts prescribed.
CO-2	Describe the speciality of love, valour, charity in Tamil tradition.
CO-3	Choose life's rules and regulations through literature.
CO-4	Determine to increase self confidence.
CO-5	Prioritize to learn modern skills such computer operation.

அலகு 1

- | | |
|------------------|----------------------------------|
| 1. சிலப்பதிகாரம் | - வழக்குரை காதை |
| 2. மணிமேகலை | - பாத்திரம் பெற்ற காதை |
| 3. சீவகசிந்தாமணி | - சீவகனுக்கு விசயை கூறிய அறிவுரை |
| 4. பெரிய புராணம் | - சிறுத்தொண்டர் நாயனார் புராணம் |
| 5. கம்பராமாயணம் | - கங்கை காண் படலம் |
| 6. இயேசு காவியம் | - பார்ச்சிலுவை |
| 7. சீறாப்புராணம் | - விட மீட்ட படலம் |

சிறுநிலக்கியங்கள்

- | | |
|-----------------------------|----------------------------|
| 1. முக்கூடற்பள்ளு | - ஆற்று வளமும் மீன் வளமும் |
| 2. திருக்குற்றாலக் குறவஞ்சி | - மலை வருணனை |

இக்காலக் காப்பியம்

- | | |
|-----------------------|--|
| 1. நாயகம் ஒரு காவியம் | - பாம்பின் நேசமும் தோழரின் பாசமும் மு.மேத்தா |
|-----------------------|--|

அலகு - 2

(இந்திய ஆட்சிப்பணிக்குத் ஆயத்தப்படுத்தும் நோக்கில் அமைந்த பயன்பாட்டுக் கட்டுரை நூல்) ஐஏஎஸ் தேர்வும் அணுகுமுறையும் இறையன்பு இ.ஆ.ப.

அலகு 3

ஊடகப் படைப்பாக்கம்

தகவல் தொடர்பு அறிமுகம் - உலகப் புகழ்பெற்ற பத்திரிகைகளும் பத்திரிகையாளர்களும் - இதழ்களுக்குச் சிறப்புக் கட்டுரைகள் எழுதுதல் - காணாமல் போன கடித இலக்கிய கட்டுரை - (இந்து தமிழ்) கலை இலக்கியப் பக்கம் - நூற்றாண்டு கடந்த இஸ்லாமியக் கர்னாடக இசை நூல் கீர்த்தனா ரஞ்சிதம் - தமிழ் இதழ்கள் பற்றிய அறிமுகம் - புகழ்பெற்ற இதழ்கள் - புகழ்பெற்ற பத்திரிகையாளர்கள் - தமிழே எங்கள் அடையாளம்

அலகு 4

தமிழ் இலக்கிய வரலாறு, ஐம்பெரும் காப்பியங்கள், ஐஞ்சிறு காப்பியங்கள், சிற்றிலக்கியங்கள் (உலா, தூது, பிள்ளைத் தமிழ், பரணி)

அலகு 5

தமிழ்நாடு அரசுப்பணியாளர் தேர்வாணையத்தின் பொதுத்தமிழ் தாளில் இடம்பெறும் இலக்கணப் பகுதி.

பிழைத்திருத்தம், வல்லினம் மிகும் இடங்கள், மிகா இடங்கள், ஒருமை-பன்மை திருத்தம், மரபுப்பிழைகள், வழுஉச்சொற்கள், பிறமொழிச் சொற்கள், வேர்ச்சொல் உள்ளிட்ட பகுதிகள்.

பாடநூல்

பயன்பாட்டுத் தமிழ், சதக்கத்துல்லாஹ் அப்பா கல்லூரித் தமிழ்த்துறை வெளியீடு - 2022

பார்வை நூல்கள்

1. தமிழ் இலக்கிய வரலாறு, முனைவர் சு.ஆனந்தன், கண்மணி பதிப்பகம், திருச்சி-620002
2. இதழியல் நுணுக்கங்கள், செண்பகா பதிப்பகம், 24/28, கிருஷ்ணா பதிப்பகம், சென்னை-600 017.

Course Outcomes

CO	Upon completion of the course, the students will be able to	PSOs Addressed	Cognitive Level
CO-1	Associate themselves to regulate life by means of the messages from old Tamils' politics, tradition and to increase belief in God besides knowing about natural resources.	1,2,3,5	Understanding
CO-2	Observe to grow characters related to discipline, high thoughts and to develop a good personality with confidence, further knowing about modern skills to develop creative skills.	1,5,3	Understanding
CO-3	Choose to create media persons, to enhance language skill, to inform historical news, and to know news related to valour and war.	1,2,4	Applying
CO-4	Explain concepts of justice and live with Nature and animals.	4,5,	Analyzing
CO-5	Summarize about arts and the mixing of other languages.	1	Evaluating

Relationship Matrix

Semester	Course Code	Title of the Course				Hours	Credits			
III	21ULTA31	பயன்பாட்டுத் தமிழ்				90	3			
Course Outcomes (COs)	Programme Learning Outcomes (PLOs)					Programme Specific Outcomes (PSOs)				
	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO-1	✓	✓	✓	✓	✓	✓	✓	✓		✓
CO-2	✓	✓		✓		✓		✓		✓
CO-3	✓	✓	✓			✓	✓		✓	
CO-4				✓	✓				✓	✓
CO-5	✓	✓				✓				
	Number of matches (✓) = 28 Relationship = Medium									

SEMESTER – III

Course Title	MODERN PROSE
Total Hrs.	90
Hrs./Week	6
Course Code	21ULAR31
Course Type	Part – I - Arabic
Credits	3
Marks	100

General Objective: To teach the history of the Prophet Muhammad (PBUH).

Course Objectives:

CO No	The learners will be able to:
1	Understand the life and history of the Prophet Muhammad (Pbuh).
2	Describe the process of the Prophethood of the Prophet Muhammad (Pbuh).
3	Explain the origins of the first Muslim convert followed by the opposition to the Prophet Muhammad (Pbuh).
4	Illustrate the incidents of Quraish indicted violence.
5	Summarise the migration of the Companions of the Prophet (Pbuh) to Ethiopia.

Unit I: page No. 27 to 38

عبد الله وآمنة – ولادته الكريمة ونسبه الزكي – رضاعته ﷺ – وفاة آمنة وعبد المطلب – مع عمه أبي طالب – التربية الإلهية – زواجه ﷺ من خديجة – قصة بنيان الكعبة ودرء فتنة عظيمة –

Unit II: 38 to 49

حلف الفضول – بعد البعثة وتبشير الصبح وطلائع السعادة – في غار الحراء – مبعثه ﷺ – في بيت خديجة – بين يدي ورقة بن نوفل – إسلام خديجة وأخلاقها – إسلام علي بن أبي طالب وزيد بن حارثة

Unit III: 50 to 62

إسلام أبي بكر بن أبي قحافة وفضله في الدعوة إلى الإسلام – إسلام أشرف من قريش – الدعوة جهارا على جبل الصفا – إظهار قومه العداوة له وحذب أبي طالب عليه – بين رسول الله ﷺ وأبي طالب – لو وضعوا الشمس في يميني والقمر في يساري – تعذيب قريش للمسلمين

Unit IV: 62 to 74

محاربة قريش لرسول الله ﷺ وتفننهم في الإيذاء – ما فعل كفار قريش بأبي بكر؟! – احتيار قريش في وصف رسول الله ﷺ – قسوة قريش في إيذاء رسول الله ﷺ ومبالغتهم في ذلك – إسلام حمزة بن عبد المطلب – ما دار بين عتبة وبين رسول الله ﷺ –

Unit V: 74 to 88

هجرة المسلمين إلى الحبشة – تعقب قريش للمسلمين – تصوير جعفر بن أبي طالب للجاهلية وتعريفه بالإسلام – خيبة وفد قريش – إسلام عمر بن الخطاب

Textbook: Ali Nadawi, Abul Hasan, QasasunNabiyeen Part - V MuassasathusSahafa wa Nashr publication Lucknow, India,1999.

Reference Books:

1. Mohammed Mus'yid Hussain, *Qasas Al Anbiya Lil Atfaal*, 2010, Dar Al Kunooz, Jordan, 2010.
2. M.R.M. Abdur Raheem, NabimargalVaralaru, Universal Publishers, Chennai, 2015.

Course Outcomes

CO	Upon completion of the course, the students will be able to:	PSOs Addressed	Cognitive Level
1	Associate themselves with the art of writing simple sentences.	1,2	Understanding
2	Construct sentences in Arabic using common words flawlessly.	1,5	Applying
3	Interpret the history of the leader of Prophets in Islam.	1,2,3,4	Applying
4	Prioritize to live a life learned from the biography of the Prophet Muhammad (PBUH).	1,4,5	Analyzing
5	Summarize the style of classical prose.	1,2,3	Evaluating

Relationship Matrix

Relationship Matrix										
Semester	Course Code		Title of the Course			Hours		Credits		
III	21ULAR31		MODERN PROSE			90		3		
Course Outcomes (COs)	Programme Learning Outcomes (PLOs)					Programme Specific Outcomes (PSOs)				
	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PSO 1	PSO2	PSO3	PSO4	PSO 5
1	✓	✓				✓	✓			
2	✓			✓	✓	✓				✓
3	✓	✓	✓	✓		✓	✓	✓	✓	
4	✓	✓		✓	✓	✓			✓	✓
5	✓	✓	✓			✓	✓	✓		
	Number of matches = 30 Relationship = Medium									

SEMESTER – III

Course Title	ONE-ACT PLAYS AND WRITING SKILL
Total Hrs.	90
Hrs./Week	6
Course Code	21ULEN31
Course Type	Part – II - English
Credits	3
Marks	100

General Objective:

To expose students the conversational patterns and help them learn written English in given practical situations.

Course Objectives:

CO	The learners will be able to:
CO-1	Identify and learn the conversational patterns in written communication.
CO-2	Distinguish the patterns of writing in formal and informal situations.
CO-3	Observe the conversational patterns in real-life situations.
CO-4	Examine various possible methods to learn the writing skill through the prescribed texts.
CO-5	Practise writing messages, essays, and reports.

UNIT I – ONE-ACT PLAYS

1. The Bishop's Candlesticks - Norman McKinnell
2. The Proposal - Anton Chekov
3. The Hour of Truth - Percival Wilde

UNIT II – ONE-ACT PLAYS

4. Aladdin and his Magic Lamp - Y. Sayed Mohammed
5. Tippu Sultan - Y. Sayed Mohammed

UNIT III – WRITING SKILL

1. **Messages** (Pages 1-9 of *Written English for You* to be taught and the tasks given to be accomplished in the *Record of Writing*)

- i) What is a message?
- ii) When do we write messages?
- iii) Why do we write messages?
- iv) How do we write messages?

2. **Letters – 1** (Pages 10-19 *Written English for You* to be taught and the tasks given in pages 17 and 19 should be accomplished in the *Record of Writing*)

- i) Letters for Ordering Supply of Goods
- ii) Letters of Apology
- iii) Letters of Complaint
- iv) Letters of Applications

3. **Letters – 2** (Pages 36-40 of *Written English for You* to be taught and the tasks given in the pages 38 and 40 should be accomplished in the *Record of Writing*)

- i) Letters to inform your plan of visit
- ii) Letters of Request
- iii) Letters of Apology

UNIT IV – WRITING SKILL

4. **Essays** (Pages 66-79 to be taught and only the tasks 1-3 from pages 79 and 80 should be accomplished in the *Record of Writing*)

- i) What is an Essay?
- ii) Types of Essays.
- iii) The Structure of an Essay.
- iv) Introductory Paragraph.
- v) Supporting Paragraph.
- vi) What can be the length of an Essay?
- vii) Why am I writing this Essay?
- viii) Who am I writing for?
- ix) How to begin an Essay?

- x) How to organize an Essay?
- xi) What to avoid in writing an Essay?

5. **Narrating** (Pages 109-116 of *Written English for You* to be taught only the tasks 1 and 2 from pages 115 to 116 to be accomplished in the *Record of Writing*)

- i) Describing events in a chronological order.
- ii) Narrating events from different points of view
- iii) Narrating events from different view point in time

UNIT V – WRITING SKILL

6. **Reporting** (Pages 127-136 be taught. The tasks given in pages 129- 134 and 136-137 must be accomplished in the *Record of Writing*)

- i) News Reports
- ii) Reporting Events or Developments.
- iii) Reporting Interviews and Press Conferences
- iv) Reports of Meetings.

7. **Summarizing** (Pages 164-172 of *Written English for You* be taught and the tasks 1-3 in pages 172-178 to be accomplished in the *Record of Writing*)

- i) What is a Summary?
- ii) How to write a Summary?
- iii) How long should a Summary be?
- iv) Should the Summary be in a Paragraph?
- v) Analysis of the Process of Summarizing.

NOTE: Questions for Units III, IV and V should be framed from the tasks given in the prescribed textbook ***Written English for You***.

Textbooks:

1. Compiled by a Board of Editors. *Plays for Pleasure*, Chennai: Paavai Publications, 2009
2. Sayed Mohammed.Y, ed. *Three One - Act Plays*. Tirunelveli. Mohammed Taahaa Publications, 2011.
3. Radhakrishna Pillai. G, ed. *Written English for You* Chennai. Emerald Publishers, 1990 (rpt. 2008)

Course Outcomes:

CO	Upon completion of this course, students will be able to:	PSOs Addressed	Cognitive Level
CO-1	Understand the nuances of English conversational patterns.	1,3,4,6	Understanding
CO-2	Explain the patterns required for conversing in formal and informal situations.	1,3,4,6	Applying
CO-3	Choose to write English sentences by means of applying their skills learned.	1,2,3	Applying
CO-4	Focus on language activities to master the writing skill.	3	Analysing
CO-5	Summarize the uses and methods of writing messages, essays, reports and pamphlets.	1,3,4	Evaluating

Relationship Matrix

Semester	Course Code		Title of the Course				Hours		Credits			
III	21ULEN31		One-Act Plays and Writing Skill				90		3			
Course Outcomes (COS)	Programme Learning Outcomes (PLOs)						Programme Specific Outcomes (PSOs)					
	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6
CO-1	✓	✓	✓				✓		✓	✓		✓
CO-2		✓	✓	✓			✓		✓	✓		✓
CO-3		✓	✓				✓	✓	✓			✓
CO-4		✓	✓	✓			✓		✓	✓	✓	✓
CO-5		✓	✓	✓			✓		✓	✓		✓
CO-6												
	Number of matches (✓) = 35 Relationship = High											

SEMESTER – III

Course Title	NUTRITION THROUGH LIFE SPAN
Total Hrs.	60
Hrs/Unit	4
Course Code	21UCND31
Course Type	DSC – V
Credits	4
Marks	100

General Objective:

This course covers the basis of menu planning, balanced diet and nutritional needs for different age groups

Course Objectives:

CO.	The learners will be able to:
CO-1	Understand the basis of menu planning
CO-2	Plan balanced diet for different age groups
CO-3	Assess the food requirements of different age groups.
CO-4	Evaluate nutritional needs of different age groups.
CO-5	Plan the menu based on RDA

UNIT I Menu Planning

Planning balanced diets – Balanced diet, Low cost balanced diets, vegetarian diets, Food exchange lists, Principles of planning diets, points to be considered in planning a diet and steps involved in planning a diet.

Recommended Dietary Allowances for different age groups (2020).

UNIT II Nutritional & food requirements for pregnancy and lactation

Pregnant woman – Nutritional requirements, food requirements, Dietary guidelines, General dietary problems.

Lactating mother – Nutritional requirement, Food requirement and menu planning.

UNIT III Nutritional & food requirements for Infancy and preschool

Infancy –Nutritional requirements, food requirements, Artificial feeding, weaning and supplementary foods.

Pre - School – Nutritional requirements, food requirements, dietary guidelines, nutrition related problems of preschoolers.

UNIT IV Nutritional& food requirements for school going & adolescence

School going children - Nutritional requirements, food requirements, dietary guidelines, diet related problems, packed lunches, school lunch programmes.

Adolescence – Nutritional requirements, Nutritional problems – Eating disorders.

UNIT V Nutritional & food requirements for Adult and old age

Adult – Reference Man, Women, Nutritional requirements and Food requirements.

Geriatric Nutrition –Nutritional requirements, food requirements, dietary guidelines, Nutrition related problems of old age, suggested recipes during old age.

Textbooks:

1. B. Srilakshmi, (2019), Dietetics, Eighth edition, New age international publishers
2. Swaminathan M (2003) Principles of Nutrition and Dietetics Babbco publishers Bangalore

References:

1. Srilakshmi., Food Science, New age international publishers.
2. Shakundala Manay., Food Facts and Principles New age international publishers.
3. CarrineJ.Robinson (1990) Principles of Nutrition and Dietetics Babbco publishers Bangalore
4. Gopalan (1999) Nutritive Value of Indian food NN publication, Hyderabad.
5. BhavanaSabrawal (1999) principles and practices of Dietetics Ajay verma
6. Davidson and Passmare (1989) Human Nutrition and Dietetics, London Churchill and Livingston Publishers.

Course Outcomes

CO.	Upon completion of the course, the students will be able to:	PSOs Addressed	Cognitive level
CO-1	Outline on the basis of menu planning.	1,2,3	Understanding
CO-2	Analyze the nutritional requirements of the pregnant and lactating mother.	1, 2,3	Applying
CO-3	Demonstrate the ability to plan and manage the dietary needs of infants and preschool children.	2 ,3,4	Analyzing
CO-4	Evaluate the ability to educate and inform about nutrient needs for school going children and adolescence.	2,3,4,5	Evaluating
CO-5	Estimate the nutritional and food requirements for adult and old age.	1.2,3,4	Creating

Relationship Matrix

Semester	Course Code	Title of the Course					Hours		Credits	
III	21UCND31	Nutrition Through Life Span					60		4	
Course Outcomes (COs)	Programme Learning Outcomes (PLOs)					Programme Specific Outcomes (PSOs)				
	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO-1	✓	✓	✓	✓		✓	✓	✓		
CO-2	✓	✓	✓	✓		✓	✓	✓		
CO-3	✓	✓	✓	✓	✓		✓	✓	✓	
CO-4	✓	✓	✓	✓	✓		✓	✓	✓	✓
CO-5	✓	✓	✓	✓		✓	✓	✓	✓	
	Number of matches (✓) = ...39.... Relationship = High									

SEMESTER – III

Course Title	NUTRITION THROUGH LIFE SPAN PRACTICALS
Total Hrs.	30
Hrs./Week	2
Course Code	21UCND3P1
Course Type	PRACTICAL-III
Credits	1
Marks	100/2

General Objective:

The course covers the basics of food preparation and portioning, knowledge on menu planning & preparation for different age groups

Course Objectives:

CO.	The learners will be able to:
CO-1	Understand the principles of menu planning
CO-2	Plan menu for different age groups
CO-3	Prepare the planned menu for different age groups.
CO-4	Visit dietary department of a hospital.
CO-5	Create menu according to the deficiency

EXPERIMENTS

1. Menu Planning, Preparation and serving of diets for Pregnant women – anaemia
2. Menu Planning, Preparation and serving of diets for Lactating mother –Calcium Deficiency
3. Menu Planning, Preparation and serving of diets for Preschool children- PEM
4. Menu Planning, Preparation and serving of diets for School going children – Vitamin –A Deficiency, underweight
5. Menu Planning, Preparation and serving of diets for College going adolescent girls – obesity, Anaemia
6. Menu Planning, Preparation and serving of diets for Old age- osteoporosis
7. Visit to dietary department of hospitals.

Course Outcomes

CO.	Upon completion of the course, the students will be able to:	PSOs Addressed	Cognitive level
CO-1	Understanding the basis of menu planning.	1,2	Understanding
CO-2	Demonstrate the ability to plan and manage the dietary needs for different age groups	1, 2,3	Applying
CO-3	Estimate the Nutritional Value of planned menu.	2 & 3	Analyzing
CO-4	Illustrate the ability to educate on nutritional needs to public.	2,3,4,5	Evaluating
CO-5	Develop the operations of dietary department in hospitals.	2,3,5	Creating

Relationship Matrix

Semester	Course Code		Title of the Course			Hours	Credits			
III	21UCND3P1		Nutrition Through Life Span Practical			30	1			
Course Outcomes (COs)	Programme Learning Outcomes (PLOs)					Programme Specific Outcomes (PSOs)				
	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO-1	✓	✓	✓	✓		✓	✓			
CO-2	✓	✓	✓	✓		✓	✓	✓		
CO-3	✓	✓	✓	✓	✓		✓	✓		
CO-4	✓	✓	✓	✓			✓	✓	✓	✓
CO-5	✓	✓	✓	✓			✓	✓		✓
	Number of matches (✓) = ...35.... Relationship = High									

SEMESTER – III

Course Title	BAKING AND CONFECTIONERY
Total Hrs.	60
Hrs./Week	4
Course Code	21UAND31
Course Type	Allied -II - 1
Credits	3
Marks	100

General Objective:

The course covers the principles, role and techniques in baking.

Course Objectives:

CO.	The learners will be able to:
CO-1	Discuss the basic principles and importance of leavening agents in baking.
CO-2	Illustrate the role of various major and minor ingredients used in bakery products.
CO-3	Categorize the role of enzymes and additives in baking process.
CO-4	Experimenting the baking process and familiarize with operations.
CO-5	Design the quality parameters of bakery products.

UNIT- I Introduction to Baking

Baking: Introduction - principles of baking - Leavening agents - Definition- physical - chemical - biological leavening agents, - role of leavening agents

UNIT- II Role of Basic Ingredients

Basic ingredients - Flour - Types of wheat flour - baking quality - Fat-Role of fats in baking - types of fat - Egg - Role of egg in baking - Sugar - Types of sugars - role of sugar in baking - Milk - Role of milk in baking - Milk products used in baking

UNIT-III Role of Other Ingredients

Role of Dried Fruits and Nuts - Flavoring and coloring agents - Role of enzymes in baking - Role of water and Salt in baking - Hygiene and Sanitation in bakery unit

UNIT-IV Process involved in Baking

Baking Process - basic concepts - batch / continuous dough mixing - Dividing - moulding - panning -proofing and baking.

Biscuits – Ingredients - preparation of biscuits

Cookies – Ingredients and different types of cookies .

Bread – Ingredients, Types and methods of bread making - Defects in bread making

UNIT-V Cakes and Pastries

Cakes – Ingredients - types of cakes - preparation of cake -Icing – different types -

Common defects while preparing cake - Pastries – types - preparation of pastries

Sandwiches - types - preparation of Sandwiches

Textbook:

1. Vijayakhader, Text book of food science and technology, Indian council of Agricultural Research, New Delhi, 2001

References:

1. Kumud Khanna et al, The art and science of cooking, A student manual, 3rd edition,. Published by Pr.Ouseph for phoenix, publishing House Pvt Ltd, 1998
2. Earl R.Palan, Judith A.Studler, preparing for the service industry, An introductory approach, AVI publishing co Ltd, 2000
3. William C practical in baking, 2000
4. Lilian Hiagland Meyer, Food chemistry CBS publishers and Distributors, 2004

Course Outcomes

CO.	Upon completion of the course, the students will be able to:	PSOs Addressed	Cognitive level
CO-1	Describe the principles and importance of leavening agents in baking	1,4,5	Understanding
CO-2	Sketch the role of basic ingredients like flour, fat, egg, milk, water, salt and sugars in baking.	1,2,4,5	Applying
CO-3	Categorize the role of dried fruits nuts, flavorings and coloring in baking.	2,4,5	Analyzing
CO-4	Experimenting Biscuit, cookies and bread and assess the various defects in bread making.	2,4,5	Evaluating
CO-5	Formulate different types of cake and icings.	2,4,5	Creating

Relationship Matrix

Semester	Course Code		Title of the Course			Hours		Credits		
III	21UAND31		Baking and Confectionery			60		3		
Course Outcomes (COs)	Programme Learning Outcomes (PLOs)					Programme Specific Outcomes (PSOs)				
	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO-1	✓	✓	✓	✓		✓			✓	✓
CO-2	✓	✓	✓	✓		✓	✓		✓	✓
CO-3	✓	✓	✓				✓		✓	✓
CO-4	✓	✓	✓				✓		✓	✓
CO-5	✓	✓	✓	✓			✓		✓	✓
	Number of matches (✓) = 34 Relationship = High									

SEMESTER – III

Course Title	BAKING AND CONFECTIONERY PRACTICALS
Total Hrs.	30
Hrs./Week	2
Course Code	21UAND3P1
Course Type	Allied – II / 1P
Credits	1
Marks	100/2

General Objective:

This course covers the techniques, principles in baking and prepare various bakery products.

Course Objectives:

CO.	The learners will be able to:
CO-1	Understand the scope of bakery, Confectionery Terms
CO-2	Study the units of measurements used in Bakery
CO-3	Make use of dried fruits nuts, flavourings and enzymes in the production of bakery items.
CO-4	Interpret the usage of various types of equipments in the preparation of bakery products.
CO-5	Examine the types and roles of fats, milk and milk products, eggs in baking.

1. Visit to a well-established bakery unit
2. Demonstration of various bakery equipments.
3. Demonstration of Bun and Bread
4. Preparation on preparation of biscuits and cookies
 - a. Butter Biscuit
 - b. Jam Darts
 - c. Melting Marvel
 - d. Multi grain Biscuit
5. **Preparation of different cakes.**
 - a. Vanilla Cake
 - b. Christmas Cake
 - c. Cup Cake
 - d. Swiss Roll
 - e. Upside down Pudding
6. **Preparation of Black forest and White forest cake.**
 - a. Demonstration of Icings
 - b. Preparation of Puff, pizza and sandwiches

Course Outcomes

CO.	Upon completion of the course, the students will be able to:	PSOs Addressed	Cognitive level
CO-1	Plan a visit to a well-established confectionery unit.	1,2	Understanding
CO-2	Make use of the various techniques in the preparation of breads and buns.	1, 2,3,4	Applying
CO-3	Propose various methods in the preparation of cakes to earn a job.	2,3,4,5	Analyzing
CO-4	Design various icing techniques towards marketing.	2,3,4,5	Evaluating
CO-5	Prepare different types of pastries	2,3	Creating

Relationship Matrix

Semester	Course Code	Title of the Course				Hours	Credits			
III	21UAND3P1	Baking and Confectionery Practicals				30	1			
Course Outcomes (COs)	Programme Learning Outcomes (PLOs)					Programme Specific Outcomes (PSOs)				
	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO-1	✓	✓	✓	✓		✓	✓			
CO-2	✓	✓	✓	✓		✓	✓	✓	✓	
CO-3	✓	✓	✓	✓			✓	✓	✓	✓
CO-4	✓	✓	✓	✓			✓	✓	✓	✓
CO-5	✓	✓	✓	✓			✓	✓		
	Number of matches (✓) = ...36.... Relationship = High									

SEMESTER – III

Course Title	Fundamentals of Computing and Security
Total Hrs.	30
Hrs./Week	2
Course Code	21USFC31
Course Type	SEC-I
Credits	2
Marks	100

General Objectives:

Introduce the fundamentals of computing devices and particularly with respect to personal use of computer hardware and software, the Internet, Cyber Crime and Cyber Security.

UNIT I Fundamental of Computers

The Role of Computers in Modern Society - Block Diagram of Digital Computer - Working Principle of Computer - Hardware-Software- Types of Software - Operating system-Definition-Single user and multi-user operating system-Time sharing-multitasking-multiprogramming-Batch Processing-on-line processing-spooling.

UNIT II Microsoft Office Package

Basics of Office Automation Tools - Microsoft Word: Create Documents – Edit and Format Documents - Microsoft Excel: Create Worksheet – Edit and Filter - Microsoft PowerPoint: Create Presentation – Edit and format Presentation – Microsoft Access: Create Database and Table – Designing database.

UNIT III Networks

Components of a Communication System - Types of Networks : Local Area Network - Metropolitan Area Network - Wide Area Network - Wireless and Wired Network – Network Topologies - World Wide Web (WWW) - Client - Server Computing.

UNIT –IV Cyber Security for ICT

Information and Communication Technology: Introduction-Basics of ICT-
Ethical & Social Issues in ICT -Digital Citizenship-Elements of Digital
Citizenship- Need for Cyber Security

UNIT –V Cyber Crime & Cyber Security

Cyber Crime: Introduction--Types of Cyber Crime-Security Issues:
Threats-Attacks-Vulnerabilities - Cyber Space-Security Services - Cyber
Security: Definition, Key Concepts, Fundamentals, Cyber Challenges and
Ethics.

Textbooks:

1. Cyber Crime & Cyber Security – “Unit IV and V , Dr. S. Shajun Nisha,PG and Research Department of Computer Science “.

Reference Book:

1. Fundamentals of Computers, by V.Rajaraman, PHI, Fifth Edition, April 2010.
2. Microsoft Office – Complete Reference – BPB Publication
3. “Introduction to Data communication and networking” – Behrouz Forouzan- Tata McGraw Hill 2nd Edition, 2006.

SEMESTER- III

Course Title	SWAYAM-NPTEL Online Certification Course
Total Hrs.	30
Hrs./Week	2
Course Code	21USOC32
Course Type	SEC-II
Credits	2
Marks	100

SWAYAM NPTEL ONLINE CERTIFICATION COURSES

GUIDELINES AND INSTRUCTIONS

1. National Programme on Technology Enhanced Learning (NPTEL) provides e-learning through online web and video courses in Engineering, Science and Humanities streams through its portal
<https://swayam.gov.in/ncdetails/NPTEL>.
2. Enrollment to all the courses is FREE.
3. Enrollment to courses and Examination Registration can be done ONLINE only. The link is available on NPTEL Website <http://npTEL.ac.in/>
4. SWAYAM – NPTEL Online Certification Courses are made optional for the students in the UG Programmes from the Academic year 2021-2022.
5. Any Eight – Week, Two-Credit Course in any discipline be chosen by the respective Departments in the Third Semester of the Undergraduate Programmes.
6. The SWAYAM–NPTEL Online Certification Courses offered during the December – April Semester be chosen by the Departments. The courses may be handled by the Department Mentor or by any teacher in the respective Departments.
7. Candidates must have completed Examination Registration and submitted assignments successfully within the prescribed time to receive hall tickets and to write examinations.
8. The allocation of marks for the online examination conducted by the respective IITs is 25:75 for each course.
9. A candidate should obtain a minimum of 40 marks on 100 marks (a minimum of 10 marks for Assignment and 30 marks in the final examination) to pass the Online Courses.

10. If a student fails in the Online Examination conducted by the respective IITs he/she would be permitted to write a Supplementary Examination for 75 marks by the Controller of Examinations of our College.
11. Those who registered for the Online Courses, obtained Assignment marks, appeared for the Online Examination and failed in the courses alone are eligible to apply for the Supplementary Examinations conducted by the College.
12. If a candidate fails in the Supplementary Examinations or does not appear for the Supplementary Examinations conducted by the College, the norms followed for taking an Arrear Examination will be adopted.
13. Course Completion Certificate will not be issued by the respective IITs for the candidates who clear the Online Courses through the Supplementary Examinations conducted by the College. The two credits the candidate earns, if passed in the Supplementary Examinations would be added in the Consolidated Statement of Marks issued by the Controller of Examinations.

SEMESTER - III

Course Title	CONVENIENCE AND HEALTH FOODS
Total Hrs..	30
Hrs./Week	2
Course Code	21USND32
Course Type	SEC- II
Credits	2
Marks	100

General Objective:

To enable students, gain in-depth knowledge about convenience and health foods.

Course Objectives :

CO	The learners will be able to:
CO-1	Understand the importance of convenience foods
CO-2	Identify the significance of health foods
CO-3	Discover traditional convenience foods and snacks
CO-4	Categorize fruit and vegetable based convenience foods
CO-5	Relate the process of extrusion

UNIT I CONVENIENCE FOODS

Introduction, history, importance, need, usefulness and limitations of convenience foods, types of convenience foods.

UNIT II: HEALTH FOODS

Definition, classification, health food types, future prospects of health foods, a specially designed foods,

UNIT III: TRADITIONAL CONVENIENCE FOODS AND SNACKS

Introduction, types, snack foods, traditional sweets and snacks, traditional cereal based convenience foods.

UNIT IV: FRUIT AND VEGETABLE BASED CONVENIENCE FOODS

Introduction, fruit based convenience foods – fruit toffees, fruit bars, fruit powder, fruit juices. Vegetable based convenience foods- dehydrated vegetables, convenience mixes.

UNIT V: EXTRUDED FOODS

Introduction and meaning, advantages, extrusion process, types of extruders, products of extrusion cooking.

Textbook:

1. Foods Facts and Principles, N. ShakunthalaManay and M. Shadaksharaswamy, 2001.

References:

1. Food Science Third edition, B. Srilakshmi, 2003.
2. Food Science, Fourth edition Norman N. Potter, 2013
3. Nutrition Facts, Karen Frazier, Aug 2015.
4. Modern Food Microbiology, Seventh edition, James M. Jay , Martin J. Loessnerm, David A. Golden, 2005.
5. Food Processing, Carl J. Schaschke, 2011

Course Outcomes

CO. No.	Upon completion of the course, the students will be able to:	PSOs Addressed	Cognitive Level
CO-1	Express the nature of convenience foods	1,2,4	Understanding
CO-2	Inspect the nature of health foods	1,2,4	Applying
CO-3	Experiment with traditional and convenience foods	1,2,4	Analysing
CO-4	Distinguish fruit and vegetable based convenience foods	1,2,4	Evaluating
CO-5	Assess the process of extrusion	1,2,4	Creating

Relationship Matrix

Semester	Course Code			Title of the Course				Hours	Credits	
III	21USND32			Convenience and Health Foods				30	2	
Course Outcomes (COs)	Programme Learning Outcomes (PLOs)					Programme Specific Outcomes (PSOs)				
	PLO	PLO	PLO	PLO	PLO	PSO	PSO	PSO	PSO	PSO
	1	2	3	4	5	1	2	3	4	5
CO-1	✓	✓	✓	✓	✓	✓	✓		✓	
CO-2	✓	✓	✓	✓	✓	✓	✓		✓	
CO-3	✓	✓	✓	✓	✓	✓	✓		✓	
CO-4	✓	✓	✓	✓	✓	✓	✓		✓	
CO-5	✓	✓	✓	✓	✓	✓	✓		✓	
	Number of matches (✓) = ...40.... Relationship = High									

SEMESTER – III

Course Title	INTRODUCTION TO FOOD AND NUTRITION
Total Hrs.	30
Hrs./Week	2
Course Code	21UNND31
Course Type	NME – I
Credits	2
Marks	100

General Objective:

The course covers the principles of nutrition, functions of nutrients, relationship between food, nutrition and health.

Course Objectives:

CO.	The learners will be able to:
CO-1	Understand the functions of food
CO-2	Learn about various food groups and balanced diet.
CO-3	Understand digestion, absorption and function of various nutrients and their sources.
CO-4	Analyze the importance of nutrients.
CO-5	Describe the various types of nutrient deficiency

UNIT: I INTRODUCTION

Important Terminologies in Nutrition: Nutrition-Over nutrition, Under Nutrition and Malnutrition, Food, Food Security, History of Nutrition-Food groups-Basic five food group, Functions of Foods- Classification of Food-cooking methods

UNIT: II PROXIMATE PRINCIPLES

Carbohydrates: classification of CHO-sources-functions-requirements of CHO, Protein: classification of protein-sources-functions- requirements of proteins, Lipids; classification-sources-functions-requirements of lipids-role of EFA.

UNIT: III VITAMINS

Fat soluble vitamins - A, D, E, K sources-functions-effects of deficiency, Water soluble vitamins- C and B complex (B1, B2, B3, B6, B9 and B12) sources-functions-effects of deficiency

UNIT: IV

MINERALS

Macro Minerals-sources-functions-requirements-deficiency of Calcium, Phosphorus, Iron, Sodium, Potassium and Magnesium.

Micromineral -sources-functions-effect of deficiency -Copper, Cobalt, Iodine, Selenium, Fluorine, Zinc.

UNIT: V

WATER AND FIBRE

Water- functions, dehydration, intoxication, Dietary fiber- definition- classification- sources- role of fiber in preventing diseases.

Textbooks:

1. Srilakshmi, B. (2004). *Dietetics*,. Fourth Edition. New age International Publishers, Delhi.
2. Srilakshmi. B,(2004). *Food Science*, Fourth Edition. New age International Publishers., Delhi,

References:

- 1.Sumati, R. Mudambi, Shalini, M. Ras, Rajagopal. M.V, (2003), *Food Science*. New age International Publishers, Delhi.
- 2.Swaminathan. M ,(2003). *Advance Text book on Food and Nutrition, Volume-II*.Bappco Publishing, Bangalore.
- 3.Darshan, S. (2010). *A Text Book of Nutrition* , PV Publications, Punjab.
- 4.Shubhangini, A. (2002), *Nutrition and Dietetics*.*Second Edition*. Tata MC Graw-Hill Publishing Company Limited, New York.

Course Outcomes

CO.	Upon completion of the course, the students will be able to:	PSO Addressed	Cognitive level
CO-1	Understand the science of food nutrition in cooking methods.	1,2,3,5	Understanding
CO-2	Identify the functions and role of carbohydrate protein and lipids.	1,2,3,5	Applying
CO-3	Examine the effects of vitamin deficiency.	1,2,3,5	Analyzing
CO-4	Explain the role of minerals and trace elements and their deficiency in human health	1,2,3,5	Evaluating
CO-5	Discuss the role Water and fiber in preventing diseases.	1,2,3,5	Creating

Relationship Matrix

Semester	Code		Title of the course			Hours		Credits		
III	21UNND31		Introduction to Food and Nutrition			30		2		
Course Outcomes (COS)	Programme Learning Out Come (POS)					Programme Specific Outcomes (PSOs)				
	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO-1	✓	✓	✓	✓		✓	✓	✓		✓
CO-2	✓	✓	✓	✓		✓	✓	✓		✓
CO-3	✓	✓	✓	✓		✓	✓	✓		✓
CO-4	✓	✓	✓	✓		✓	✓	✓		✓
CO-5	✓	✓	✓	✓		✓	✓	✓		✓
	Number of matches (✓) = ...40.... Relationship = High									

SEMESTER – IV

Course Title	சங்கத்தமிழ் (Sangam Tamil)
Total Hrs.	90
Hrs./Week	6
Course Code	21ULTA41
Course Type	Part – I - Tamil
Credits	3
Marks	100

Course Objectives:

CO	The learners will be able to:
CO-1	Distinguish Sangam Tamil from other literature and language.
CO-2	Give examples about love, valour and charity in Tamil tradition.
CO-3	Determine to follow life protocols through literature.
CO-4	Focus on improving their self confidence.
CO-5	Choose to instruct about modern skills like computer.

அலகு – 1 சங்கச் செய்யுள்கள்

- நற்றிணை - நின்ற சொல்லர், நீடு தோன்று இனியர் (1:1-9)
அம்ம வாழி தோழி நன்னுதற்கு (388:1-10)
- குறுந்தொகை - ஆம்பற்பூவின் சாம்பலன்ன (46: 1-7)
வேரல் வேலி வேர் கோட்பலவின் (18:1-5)
- புறநானூறு - ஈன்று புறந்தருதல் எந்தலைக் கடனே (312: 1-6)
நின் நயந்து உறைநர்க்கும் நீநயத்து உரை நற்கும் (163: 1-9)
- ஐங்குறுநூறு - களவன் பத்து – முள்ளிவேர்
அளைக் களவன் ஆட்டி (23: 1-4)
புலவிப் பத்து – அம்சில் ஓதி அசிநடைப் பாண்மகள் (49: 1-4)
- கலித்தொகை - வறியவன் இளமைபோல், வாடிய சினையவாய்ச் (10:1-23)
- அகநானூறு - நாம் நகையுடையம் நெஞ்சே! – கருந்தேறல் (121:1-15)
- பதிற்றுப்பத்து - இழையர் குழையர் நறுந்தண்மாலையர் (46:1-14)
- பரிபாடல் - வைகையில் பெரு வெள்ளம்-நிறை கடல் முகந்து உராய் (1-24)
- முல்லைப்பாட்டு - முழுவதும்

அலகு – 2

சுயமுன்னேற்றக் கட்டுரைகள்

அலகு – 3

இணையப் பயன்பாட்டில் தமிழ்

அலகு – 4

இலக்கிய வரலாறு – சங்க இலக்கியம் ஓர் அறிமுகம் - திணைக்கோட்பாடு
– எட்டுத்தொகை நூல்கள் - நற்றிணை, குறுந்தொகை, ஐங்குறுநூறு, பதிற்றுப்பத்து, பரிபாடல், கலித்தொகை, அகநானூறு, புறநானூறு – பத்துப்பாட்டு நூல்கள் - திருமுருகாற்றுப்படை, பொருநராற்றுப்படை, சிறுபாணாற்றுப்படை,

பெரும்பாணாற்றுப்படை, நெடுநல்வாடை, குறிஞ்சிப்பாட்டு, முல்லைப்பாட்டு, மதுரைக்காஞ்சி, பட்டினப்பாலை, மலைப்படுகடாம்

அலகு – 5

தமிழர் வாழ்வில் அகமும் புறமும் திணைக்கோட்பாடு

பாடநூல்: சங்கத் தமிழ்

பார்வைநூல் : தமிழ் இலக்கிய வரலாறு, சாகித்ய அகாதெமி வெளியீடு.

Course Outcomes

CO	Upon completion of the course, the students will be able to:	PSOs Addressed	Cognitive Level
CO-1	Associate themselves to learn about disciplines related to internal and external lives besides knowing about the growth of Tamil by the establishment of Sangam.	1,4,5	Understanding
CO-2	Develop their knowledge about the regulated life, charity, administration and habits of Sangam Tamils.	1,4,5	Applying
CO-3	Classify kings and lords in line with the historical information.	1,2,3,4	Analyzing
CO-4	Differentiate the honest life, high thoughts, barter system and modern skills of the courtesans.	4, 5	Analyzing
CO-5	Summarize about water, air and land resources.	5	Evaluating

Relationship Matrix

Semester	Course Code	Title of the Course				Hours	Credits			
IV	21ULTA41	சங்கத்தமிழ்				90	3			
Course Outcome s (COs)	Programme Learning Outcomes (PLOs)					Programme Specific Outcomes (PSOs)				
	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO-1	✓	✓	✓	✓	✓	✓			✓	✓
CO-2	✓	✓	✓	✓	✓	✓			✓	✓
CO-3	✓	✓	✓	✓		✓		✓	✓	✓
CO-4	✓	✓		✓					✓	✓
CO-5	✓				✓					✓
	Number of matches (✓) = 32 Relationship = High									

Semester – IV

Course Title	CLASSICAL PROSE
Total Hrs.	90
Hrs./Week	6
Course Code	21ULAR41
Course Type	Part –I - Arabic
Credits	3
Marks	100

General Objective: To impart moral values to students and build their personality to make them better citizens.

Course Objectives:

CO	The learners will be able to:
1	Observe the etiquettes to be followed with the Prophet (PBUH) discussed in Surah Al-Hujuraath.
2	Associate themselves with the good characters in day today life.
3	Illustrate the life histories of Imams of the Quran, Hadeeth and Islamic jurisprudence.
4	Examine the style of Classical Arabic i.e. the language of the Quran and Hadeeth.
5	Explain the moral values mentioned in Hadeeth.

Unit I: Verses from 1 to 12 from (Sura – al – Hujraat)

" من الآية "يا أيها الذين آمنوا لا تقدموا" إلى الآية "يا أيها الذين آمنوا اجتنبوا

Unit II: Verses from 10 to 18 from (Sura–al–Hujraat) & verses from Surah Luqman (12 to 19)

"من الآية "يا أيها الناس إنا خلقناكم" إلى الآية "إن الله يعلم غيب السموات
"من الآية "ولقد آتينا لقمان الحكمة" إلى الآية "واقصد في مشيك

Unit III: Collection and compilation of Quran and Hadeeth, History of Ibn Abbas (Ral), Imam Ibn-Khathir, History of Imam Abu Hanifa, Ash-shafi, History of Imam Bukhari, Muslim, Abu Dawood, At-Tirmidi, An-Nasae and Ibn-Majah

Unit IV: Hadeeth 1 to 10

"من الحديث "لا تأكلوا بالشمال" - إلى الحديث "خيركم من تعلم القرآن

Unit V:- Hadeeth 11 to 20

"من الحديث " لا تمنعوا نساءكم " - إلى الحديث "حق المسلم على المسلم خمس

TEXT BOOK

1. A study material on "Tafseer Surah Al Hujuraath and from Suraah Luqman and Biographies of selected Islamic Scholars" prepared by Dr. J. Ubaiyathulla and Dr. S.A. Mohamed Rafeek.
2. Shaykh Dr. V. Abdur-Raheem, Ahadeeth Sahlah, Islaamic Foundation Trust, 1994

Course Outcomes

CO	Upon completion of the course, the students will be able to	PSOs Addressed	Cognitive Level
1	Understand the core essence of the Qur'anic verses.	1,2	Understanding
2	Develop refined manners based on the clear understanding of the values as preached in the Holy Qur'an.	1,2,4	Applying
3	Analyze the life history of the eminent scholars and their remarkable contributions to the Quran and Hadeeth literature.	1,2,3	Analyzing
4	Evaluate the immaculate virtues and inspiring value systems of the Prophet.	1,2,3,4	Evaluating
5	Select a healthy environment to practise abiding by the teachings of the Prophet (PBUH).	1,2,3,5	Evaluating

Relationship Matrix

Semester	Course Code		Title of the Course			Hours		Credits		
IV	21ULAR41		CLASSICAL PROSE			90		3		
Course Outcomes (COs)	Programme Learning Outcomes (PLOs)					Programme Specific Outcomes (PSOs)				
	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
1	✓	✓				✓	✓			
2	✓	✓		✓		✓	✓		✓	
3	✓	✓	✓			✓	✓	✓		
4	✓	✓	✓	✓		✓	✓	✓	✓	
5	✓	✓	✓	✓	✓	✓	✓	✓		✓
	Number of matches = 33 Relationship = Medium									

SEMESTER – IV

Course Title	A PRACTICAL COURSE IN SPOKEN ENGLISH
Total Hrs.	90
Hrs./Week	6
Course Code	21ULEN41
Course Type	Part – II - English
Credits	3
Marks	100

General Objective:

To introduce students to the interactive expressions and pronunciation practice to help themselves become competent in spoken mode of communication.

Course Objectives:

CO	The learners will be able to:
CO-1	Associate themselves with the interactional and transactional modes of language.
CO-2	Classify words based on the register and usage to use them contextually.
CO-3	Distinguish sound patterns in English phonetically.
CO-4	Illustrate sound patterns in English with relevant examples.
CO-5	Practise to master competency in description, narration, argumentation and continuous speech.

UNIT I

Interactive Expressions and Pronunciation Practice: Consonants
(Chapters 1 - 3 of *A Course in Spoken English*)

UNIT II

Introducing oneself / others, patterns for greeting, requesting, expressing and responding to thanks and etc., & Pronunciation Practice: Vowels
(Chapters 4 – 8 of *A Course in Spoken English*)

UNIT III

Developing descriptive competency, narrative competency, arguing competency, compering competency and Pronunciation Practice: Diphthongs (Chapters 9 – 13 of *A Course in Spoken English*)

UNIT IV

Practising continuous speech, group discussion and pronunciation practice: Word Accent and Intonation (Chapters 14 – 19 of *A Course in Spoken English*)


UNIT V

Listening Practice : Students will listen to audio and video materials for 10 – 12 hours.

Textbooks, Workbook, Record Note:

1. Nihamathullah. A. et al. *A Course in Spoken English*, Tirunelveli: MSU, 2005. (rpt. 2010).
2. Board of Editors, Department of English, Sadakathullah Appa College, *A Workbook for A Course in Spoken English*, 2011.
3. Spoken English Practical Record.

Evaluation Scheme:

I Internal Oral Test	: 15 Marks		The best two of the three CIA test marks will be added up
II Internal Oral Test	: 15 Marks		
III Internal Oral Test	: 15 Marks		

Distribution of Marks

The best two of the three CIA test marks	: 30 Marks
Loud Reading	: 05 Marks
Listening Test	: 05 Marks
Internal Marks	: 40 Marks
External Oral Test	: 50 Marks
Record Note	: 05 Marks
Workbook	: 05 Marks
External Marks	: 60 Marks

Course Outcomes

CO	Upon completion of this course, students will be able to:	PSOs Addressed	Cognitive Level
CO-1	Understand and describe the nuances of language used in general communication.	1,2,4	Understanding
CO-2	Give examples of words with different register suiting the context.	1,2	Understanding
CO-3	Apply their knowledge of Phonetics and vocabulary to learn to speak distinctly.	1,2,3	Applying
CO-4	Prioritize learning vocabulary and pronounce them phonetically so as to help themselves attain the flow of speech.	1,2,3	Analysing
CO-5	Find errors in the usage and pronunciation of English words committed by their peers.	1,2,3,4	Evaluating

Relationship Matrix

Semester	Course Code	Title of the Course				Hours	Credits			
IV	21ULEN41	A PRACTICAL COURSE IN SPOKEN ENGLISH				90	3			
Course Outcomes (COs)	Programme Learning Outcomes (PLOs)					Programme Specific Outcomes (PSOs)				
	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO-1	✓	✓		✓		✓	✓		✓	
CO-2	✓	✓				✓	✓			
CO-3	✓	✓	✓			✓	✓	✓		
CO-4	✓	✓	✓			✓	✓	✓		
CO-5	✓	✓	✓		✓	✓	✓	✓		✓
	Number of matches (✓) = 30 Relationship = Medium									

Semester – IV

Course Title	MEDICAL NUTRITION THERAPY
Total Hrs.	60
Hrs/ Week	4
Course Code	21UCND41
Course Type	DSC – VI
Credits	4
Marks	100

General Objective:

This course covers the national nutritional problems and their implications, methods of assessment of nutritional status.

Course Objectives:

CO.	The learners will be able to:
CO-1	Understanding of nutrition management in order to improve patient outcomes.
CO-2	Know medical nutrition therapy for various diseases states including critical care patients.
CO-3	Identify accurate nutrition information and be able to better interpret nutrition information.
CO-4	Develop skills in organizing and evaluating nutrition projects in the community.
CO-5	Know how to complete a dietary and clinical nutrition assessment.

Unit I Therapeutic Diet

Definition of dietetics – purpose of diet therapy - Routine hospital diets – clear fluid diet, full fluid diet – soft diet, regular normal diet- - preoperative diet-dietary management , postoperative diet.

Special feeding methods – Enteral-introduction, oral supplements-types of food - feeding requirements, Parental feeding- introduction, TPN-TPN Formula for children and adults, complication, refeeding syndrome, advantages and disadvantages

Unit II Fever and Diabetes

Diet in fevers - causes, metabolic changes during fever- types- typhoid- symptoms and signs, Principles of diet, dietary suggestion influenza -symptoms, principles of diet, malaria – symptoms and signs, Principles of Diet, Tuberculosis- Clinical Features, Modification of Nutrients, Principles of Diet, Dietary Management .

Diet in Diabetes Mellitus – Etiology- Genetics, Environmental Factor, Symptoms, Types-Type I& Type II, Diagnosis, Treatment- Clinical Criteria, Bio Chemical Criteria, Blood Glucose Monitoring, Management of Diabetes, Nutritional Requirements, Dietary Guidelines.

Unit III Cardiac Disorders and GI tract

Diet in Cardiac disorders – Prevalence, clinical effects, Risk factors, role of fat in the

development in Atherosclerosis, dietary management. Hypertension- causes, types-mild, moderate, severe, symptoms, principles of diet, dietary management.

Diet in diseases of the digestive tract – peptic ulcer-mechanism of ulcer formation - duodenal ulcer, gastric ulcer-aetiology, Causes, symptoms, diagnosis, and dietary management for peptic ulcer, diarrhoea – types , fluid management , diarrhoea in adults and constipation- types dietary consideration .

Unit IV Kidney and Liver Diseases

Diet in kidney diseases – functions of kidney, Causes, Symptoms and Dietary Modification for glomerulonephritis, acute, chronic renal failure - Causes, Symptoms and Dietary management ,nephrosis- Causes, Symptoms and Dietary management , and Kidney stone- types, Causes, Symptoms and Dietary management

Diet in liver diseases – functions of liver, agents responsible for liver damage, Cirrhosis of liver- Aetiology , Symptoms, principles of diet and Dietary management, Hepatitis- Causes, Symptoms and Dietary management ., gall stones - Causes, Symptoms and Dietary management .

Unit V Obesity, Under Weight and cancer

Obesity- aetiology, theories, complications, assessment, types, treatment – diet therapy, principles of diet, Dietary guidelines underweight – aetiology, Nutritional Food Requirement and Dietary Guidelines.

Cancer – risk factors, types, clinical symptoms, Nutritional Requirements and Dietary Management, Role of Food in Prevention of Cancer

Text books:

- 1.Srilaskmi. B, Dietetics. Fourth Edition. New age International Publishers, Delhi, 2004.
- 2.Swaminathan M Principle of nutrition and Dietetics Babbcopublishers , Bangalore, 2003

Reference Books:

2. Gopalan,Nutritive Value of Indian food NN publication Hyderabad, 1999.
3. Carrine J.Robinson, Principles of Nutrition and Dietetics Babbco publishers Bangalore,1999.
4. Davidson and Passmare, Human Nutrition and dietetic, London Churchill and Livingston Publishers, London , 1989.

Course Outcomes

CO.	Upon completion of the course, the students will be able to:	PSOs Addressed	Cognitive level
CO-1	Explain the routine hospital diets.	1,2,3,5	Understanding
CO-2	Identify the nutritional requirements for diabetes and febrile conditions.	2,3,5	Applying
CO-3	Analyze the dietary modification for CVD and GI tract infections.	2,3,5	Analyzing
CO-4	Determine the nutritional and food requirements for kidney and liver diseases.	2,3,5	Evaluating
CO-5	Discuss the lifestyle modifications for cancer, obesity and underweight.	2,3,5	Creating

Relationship Matrix

Semester	Code		Title of the course			Hours	Credits			
IV	21UCND41		Medical Nutrition Therapy			60	4			
Course Outcomes (COS)	Programme Out Come (POS)					Programme Specific Outcomes (PSOs)				
	PLO1	PLO2	PLO3	PLO4	PLO5	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO-1	✓	✓	✓	✓		✓	✓	✓		✓
CO-2	✓	✓	✓	✓			✓	✓		✓
CO-3	✓	✓	✓	✓			✓	✓		✓
CO-4	✓	✓	✓	✓			✓	✓		✓
CO-5	✓	✓	✓	✓			✓	✓		✓
	Number of matches (✓) = ...36.... Relationship = High									

SEMESTER – IV

Course Title	MEDICAL NUTRITION THERAPY PRACTICALS
Total Hrs.	30
Hrs./Week	2
Course Code	21UCND4P1
Course Type	PRACTICAL – IV
Credits	1
Marks	100/2

General Objective:

Develop menus and recipes which reflect current practice in the treatment of disease with diet therapy.

Course Objectives:

CO.	The learners will be able to:
CO-1	Know how to gather and interpret information from various domains to accurately assess nutritional status.
CO-2	Gather, analyze and interpret the nutrient composition of foods/menus
CO-3	Identify the appropriate medical nutrition therapy for specific disease states and provide the appropriate intervention, including calculating and defining diets
CO-4	Develop the ability to use the nutrition care process
CO-5	Analyze the nutritional and food requirements for various disease

1. Principles of menu planning, RDA
2. Routine hospital diets
3. Menu planning preparation and evaluation for Diabetes mellitus
4. Menu planning preparation and evaluation for peptic ulcer
5. Menu planning preparation and evaluation for hypertension
6. Menu planning preparation and evaluation for acute renal failure
7. Menu planning preparation and evaluation for obesity
8. Menu planning preparation and evaluation for under weight
9. Menu planning preparation and evaluation for atherosclerosis.
10. Menu planning preparation and evaluation for fever (Tuberculosis)
11. Menu planning preparation and evaluation for hepatitis
12. Menu planning preparation and evaluation for constipation
13. Menu planning preparation and evaluation for Cancer
14. Menu planning preparation and evaluation for Kidney stone
15. A report on Visit to dietary department of a reputed Hospital

Course Outcomes

CO.	Upon completion of the course, the students will be able to:	PSO Addressed	Cognitive level
CO-1	Describe Principles of Menu Planning.	1, 2,3,5	Understanding
CO-2	Demonstrate the menu plan for Constipation, Diabetes, ulcer and cancer.	2,3,5	Applying
CO-3	Explain the diet plan for CVD and kidney diseases.	2,3,5	Analyzing
CO-4	Assess the diet chart for TB and hepatitis.	2,3,5	Evaluating
CO-5	Plan a visit to the dietary department of a reputed hospital.	2,3,5	Creating

Relationship Matrix

Semester	Code		Title of the course			Hours	Credit			
IV	21UCND4P1		Medical Nutrition Therapy Practicals			30	1			
Course Outcomes (COS)	Programme Learning Out Come (POS)					Programme Specific Outcomes (PSOs)				
	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PSO1	PSO2	PSO3	PSO4	PSO5
CO-1	✓	✓	✓	✓		✓	✓	✓		✓
CO-2	✓	✓	✓	✓			✓	✓		✓
CO-3	✓	✓	✓	✓			✓	✓		✓
CO-4	✓	✓	✓	✓			✓	✓		✓
CO-5		✓	✓				✓	✓		✓
	Number of matches (✓) = ...34.... Relationship = High									

SEMESTER – IV

Course Title	FOOD MICROBIOLOGY
Total Hrs.	60
Hrs./Week	4
Course Code	21UAND41
Course Type	ALLIED – II -2
Credits	3
Marks	100

General Objective:

To gain knowledge on microbes in daily life and develop skills in food fermentation microbiology.

Course Objectives:

CO.	The learners will be able to:
CO-1	Identify and classify types of microorganisms in food and compare their characteristics and behaviour
CO-2	Know about the morphology of microorganism
CO-3	Describe the contamination of cereals, fruits, vegetables and dairy products
CO-4	Understand the spoilage and contamination of non-vegetarian foods
CO-5	Apply the microbes in food production

UNIT: I - INTRODUCTION TO FOOD MICROBIOLOGY

Definition of Food microbiology- Aims and objectives of food microbiology -General classification of microorganism-Factors affecting growth of microorganisms in food

UNIT: II - MORPHOLOGY OF MICROORGANISMS

Structure of molds, types ,characteristic features and economic uses ,Structure of yeast , characteristic features and economic uses,Structure of bacteria , characteristic features and economic uses

UNIT: III - FOOD SPOILAGE AND CONTAMINATION

Contamination and spoilage of cereals and cereals product, Contamination and spoilage of fruits and vegetables products, Contamination and spoilage of dairy products.

UNIT: IV - FOOD IN RELATION TO DISEASES

Contamination and spoilage of Meat, Contamination and spoilage of Fish, Contamination and spoilage of Egg and Poultry

UNIT: V - MICROBES IN FOOD PRODUCTION

Wine and beer production, Food from microorganisms (SCP), Different enzymes used as microorganisms

Textbooks:

1. William C Frazier& Dennis C Westhoff ,Food Microbiology , MC Graw Hill Publication, New York, 2012.

2. Anna K. Joshua, Microbiology, MC Graw Hill Publication, New York, 2009.

References:

1. V.M. Foster, Food Microbiology, CBS Publishers, New York, 2005.
2. James M Jay, Modern Food Microbiology, CBS Publishers, New York, 2005.
3. M.R. Adams & M.O. Moses, Food Microbiology, New Age Publisher, Delhi, 2018.

Course Outcomes

CO.	Upon completion of the course, the students will be able to:	PSO	Cognitive level
CO -1	Understand aim, objectives of food microbiology and general classification of microorganisms.	1,2,4	Understanding
CO -2	Identify morphology of Microorganisms.	1,2,4	Applying
CO- 3	Examine the various stages of food spoilages and contamination in cereals and vegetables.	2,4	Analyzing
CO- 4	Determine the various stages of food spoilages and contamination in meat, fish, eggs and poultry.	2,4	Evaluating
CO- 5	Synthesize the microbes present in food products and diseases related to it.	2,4	Creating

Relationship Matrix

Semester	Code					Title of the course			Hours	Credits
IV	21UAND41					Food Microbiology			60	3
Course Outcomes (COS)	Programme Learning Out Come (POS)					Programme Specific Outcomes (PSOs)				
	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PSO1	PSO2	PSO3	PSO4	PSO5
CO-1	✓	✓	✓	✓		✓	✓		✓	✓
CO-2	✓	✓	✓	✓		✓	✓		✓	✓
CO-3	✓	✓	✓	✓			✓		✓	✓
CO-4	✓	✓	✓	✓			✓		✓	✓
CO-5	✓	✓	✓	✓			✓		✓	✓
	Number of matches (✓) = 37..... Relationship = High									

SEMESTER – IV

Course Title	FOOD MICROBIOLOGY PRACTICALS
Total Hrs.	30
Hrs./Week	2
Course Code	21UAND4P1
Course Type	ALLIED – II -2P
Credits	1
Marks	100/2

General Objective:

This course covers the role of microbes in daily life and skills in food fermentation

Course Objectives:

CO.	The learners will be able to:
CO-1	Classify the kind of yeast, mould and bacteria in spotters
CO-2	Make use of various microbiological equipment
CO-3	Examine the microorganisms with unstained techniques
CO-4	Identify the microorganisms with stained techniques
CO-5	Inspect the microorganisms in food products

1. Identification of spotters on yeast, mould and pathogenic bacteria.
2. Microbiological equipment and their functions – Microscope, Autoclave, Incubator, Inoculation chamber/Laminar air flow, colony counter.
3. Pure culture techniques - spread plate, streak plate and pour plate methods
4. Staining techniques-simple and differential.
5. Examination of micro organisms in pickle, canned foods, meat and soft drinks.

Textbooks:

1. Frazier WC. Food Microbiology, New Willey Publications. 1999

References:

1. Adams M R and Moss MO, Food Microbiology, New Age International Pvt. Ltd., New Delhi. 1996.
2. Cliver DO. Food Borne Diseases Academic Press, Inc. London 1990.

Course Outcomes

CO.	Upon completion of the course, the students will be able to:	PSOs Addressed	Cognitive Level
CO-1	Recognize yeast, mould and bacteria	1,3	Understanding
CO-2	Make use of different equipment to identify the microbial growth	2,3,4	Applying
CO-3	Examine the micro organisms with culture techniques	2,3,4	Analyzing
CO-4	Assess the staining methods in microbiology	1,2,3	Evaluating
CO-5	Investigate the micro organisms in foods	2,3,4	Creating

Relationship Matrix

Semester	Course Code	Title of the Course					Hours	Credit		
IV	21UAND4P1	Food Microbiology Practicals					30	1		
Course Outcomes (COs)	Programme Learning Outcomes (PLOs)					Programme Specific Outcomes (PSOs)				
	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO-1	✓	✓	✓		✓	✓		✓		
CO-2	✓	✓	✓		✓		✓	✓	✓	
CO-3	✓	✓	✓		✓		✓	✓	✓	
CO-4	✓	✓	✓		✓	✓	✓	✓		
CO-5	✓	✓	✓		✓		✓	✓	✓	
	Number of matches (✓) = 34 Relationship = High									

SEMESTER – IV

Course Title	SOFT SKILLS
Total Hrs.	30
Hrs./Week	2
Course Code	21USSS41
Course Type	SEC-III
Credits	2
Marks	100

Unit – I - Introduction to Soft skills

Soft skills – Meaning and definition – Importance of soft skills – Soft Skills Vs Hard Skills – Components of Soft skills – Life skills, Communication Skills , Employability Skills and Corporate Skills – Ways to develop soft skills – Applications of Soft skills.

Unit – II - Life Skills

Life Skills – Meaning and Significance – Elements of Life skills – **Attitude** – Types of Attitude – Developing positive attitude – **Self development** – self awareness – benefits – Motivation – Types – Intrinsic and Extrinsic - Self Assessment through SWOT – **Emotional Intelligence** – Need of E.I - Goleman's EQ model – Methods of EI Development.

Unit – III - Communication skills

Communication skills - Types of communication - Barriers of communication - Overcoming barriers of communication – **Listening Skills** – Process of listening – Types of listening – Barriers to effective listening – Effective listening Strategies - **Reading Skills** – Essential of Reading - Methods of Reading – **Speaking Skills** - benefits of speaking - Self development through speaking skills - **Writing skills** - purpose - Importance of styles in writing skills - **Non verbal Communication** – Importance – Types.

Unit – IV - Employability Skills:

Internet Skills – Job web portals – Roles and Significance of Job portals – Registration process in Job Portals – **Resume Building** – Resume Content – Resume designs and Layouts – Job Application letter – Format and writing Tips of Application Letter – **Interview Skills** – Types of Job Interview – Interview preparation techniques – Group Discussion – Roles to play in Group discussion.

Unit – V - Corporate Skills:

Leadership skills - Manager Vs Leader – Mintzberg's Managerial roles – Traits of Good leader – **Time Management** – Major Blocks to Time Management – Covey's Time Management Matrix – Time Management tips – **Negotiation Skills** – Approaches of Negotiation – **Avoid , Compete, Accommodate, Compromise and Collaborate** – **Stages of Negotiation** – **Stress Management** – **Causes and Consequences of stress** – **Stress Coping Strategies.**

REFERENCE BOOKS:

1. Suresh, K. E. (2010). *Communication Skills and Soft Skills: An Integrated Approach (With Cd)*. Pearson Education India.
2. S. Hariharan, S. Sundararajan and SP. Shanmughapriya, *Soft skills*, MJP publishers, Chennai, 2010.

SEMESTER – IV

Course Title	SPORTS NUTRITION
Total Hrs.	30
Hrs./Week	2
Course Code	21USND42
Course Type	SEC-IV
Credits	2
Marks	100

General Objective:

This course covers the basic principles of health education and sports nutrition, importance of diet for an athlete.

Course Objectives:

CO.	The learners will be able to:
CO-1	Understand the Importance of health education and sports nutrition
CO-2	Gain knowledge about Aerobic exercises and Yoga
CO-3	Understand the benefits of doing exercise regularly
CO-4	Discuss the difference between dietary supplements and doping.
CO-5	Gain knowledge about the importance of Balanced diet in sports

UNIT – I Introduction to Health Education

Definition of health education and sports nutrition

Aims and objectives of health education

Need and Importance of health education and nutrition

UNIT – II Benefits of Exercises

Types of exercises -Aerobic and anaerobic exercises

Yoga – types and health benefits

Health benefits of doing exercise regularly

UNIT – III Doping and Dietary Supplements

Doping in athletes and its types

Claimed dietary supplements for athletes,

Sports anemia and female athlete

UNIT – IV Importance of diet in sports

Balanced diet in sports, Antioxidants rich foods for athletes

Role of a healthy diet in promoting an athlete

Effect of diet in sports performance

UNIT – V Fluids and Electrolytes

Fluid and electrolytes balance

Water dehydration and intoxication

Fluid replacement for athletes during sports.

Textbooks:

1.Srilakshmi., Food Science, New age international publishers.

2 .B. Srilakshmi, Nutrition Science 4th edition, New Age International Publishers, 2012

References:

1.Shakuntala Manay., Food Facts and Principles New age international publishers.

2.Carrine Robinson (1990) Principles of Nutrition and Dietetics Babbco publishers Bangalore.

3.Swaminathan M (2003) Principles of Nutrition and Dietetics Babbco publishers Bangalore.

Course Outcomes

CO.	Upon completion of the course, the students will be able to:	PSOs Addressed	Cognitive level
CO-1	Infer the objectives and importance of sports nutrition and health education.	1,2	Understanding
CO-2	Demonstrate aerobic exercises and yoga.	2,3,5	Applying
CO-3	Outline dietary supplements and doping.	2 & 4	Analyzing
CO-4	List out the role of diet in sports performances.	1,2, 3,4	Evaluating
CO-5	Outline the importance of fluids and antioxidants for athletes.	2,3	Creating

Relationship Matrix

Semester	Course Code	Title of the Course				Hours	Credits			
IV	21USND42	SPORTS NUTRITION				30	2			
Course Outcomes (COs)	Programme Learning Outcomes (PLOs)					Programme Specific Outcomes (PSOs)				
	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO-1	✓	✓	✓	✓		✓	✓			
CO-2	✓	✓	✓				✓	✓		✓
CO-3	✓		✓	✓			✓		✓	
CO-4	✓	✓	✓			✓	✓	✓	✓	
CO-5	✓	✓	✓	✓			✓	✓		
	Number of matches (✓) = ...30.... Relationship = Medium									

SEMESTER – IV

Course Title	HEALTH AND FITNESS
Total Hrs.	30
Hrs./Week	2
Course Code	21UNND41
Course Type	NME - II
Credits	2
Marks	100

General Objective:

- This course covers the importance of health and fitness and diet in maintaining good health.

Course Objectives:

CO.	The learners will be able to:
CO-1	Familiarize about the terms related to health and fitness
CO-2	Acquire knowledge about role of foods in maintaining health.
CO-3	Understand the importance of physical activity.
CO-4	Acquire knowledge about Balanced Diet and Menu planning
CO-5	Compare the relationship between fitness and nutrition.

UNIT I Health and Hygiene

Definitions – Health, physical health, mental health & public health Four Dimensions of Health. Hygiene – importance of hygiene, food hygiene & personnel hygiene

UNIT II Role of Foods in health

Role of foods in maintaining health – Antioxidant rich foods, immune boosting foods, cancer fighting foods, anti-inflammatory foods

UNIT III Role of Yoga and Exercises

Types of exercises -Aerobic and anaerobic exercises

Yoga – types and health benefits

Health benefits of doing exercise regularly

UNIT IV Balanced Diet

Balanced Diet- definition, food pyramid, low cost balanced diets.

Menu planning- points to be considered in planning menu, principles in menu planning.

UNIT V Types of Diet

Weight management- importance of weight management and exercise.

Famous diets in weight management- paleo diet, vegan diet, and low carbohydrate diet, low fat diet, Keto diet.

Textbook:

- 1) Srilakshmi. B, (2002). Nutrition Science, New Age International (P) Limited, Publishers, New Delhi, 110002, Third Edition.

References:

1. K. Park Text book of preventive and social medicine, 15th edition, MIS BanarsidasBhano Publishers, Jabalpur, 1997.
2. Public health and hygiene, R.SornarajV.Kumaresan, Sara's publication.
3. N. ShakuntalaManay, M. Shadaksharaswamy, Foods Facts and principles, New age International (p) Ltd., Publishers Second Edition, 2001

Course Outcomes

CO.	Upon completion of the course, the students will be able to:	PSOs Addressed	Cognitive level
CO-1	Prioritize the importance of health and hygiene for human well-being.	1,2	Understanding
CO-2	Infer the sources of functional foods.	1, 2	Applying
CO-3	List out the types and health benefits of exercises.	1, 2 & 3	Analyzing
CO-4	Elaborate on the balanced diet and principles in menu planning.	2, 3	Evaluating
CO-5	Compare and contrast on weight management programs and famous diets.	2,3	Creating

Relationship Matrix

Semester	Course Code	Title of the Course				Hours	Credits			
IV	21UNND41	HEALTH AND FITNESS				30	2			
Course Outcomes (COs)	Programme Learning Outcomes (PLOs)					Programme Specific Outcomes (PSOs)				
	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO-1	✓	✓		✓		✓	✓			
CO-2	✓	✓	✓	✓		✓	✓			
CO-3	✓	✓		✓		✓	✓	✓		
CO-4	✓	✓	✓	✓			✓	✓		
CO-5	✓	✓	✓	✓			✓	✓		
	Number of matches (✓) = ...29.... Relationship = Medium									

SEMESTER – IV

Course Title	FIELDWORK / INTERNSHIP
Course Code	21UFND41
Course Type	FW/I
Credits	2
Marks	100

The following guidelines have been framed for the courses titled Fieldwork and Internship for all the U.G. Programmes.

- Fieldwork/Internship shall be in the fourth semester of each programme.
- A Department can opt for either Fieldwork or Internship.
- Fieldwork may be done individually or in groups not exceeding five per group.
- The minimum length of the Fieldwork report should be 15 to 20 pages in A4 size.
- Marks for the Fieldwork Report will be 100 divided as 60% for the Fieldwork and 40% for Viva-Voce Examination. 2 Credits will be awarded to the students who complete Internships and produce Internship Completion Certificate duly signed by the authority concerned.
- Fieldwork / Internship shall be allotted outside the working hours for a maximum of six days.

Scheme of Evaluation:

Fieldwork	Internal	External
Word of title / Topic	5	5
Objectives / Formulation including Hypothesis	5	5
Methodology / Techniques / Procedures adopted	15	15
Chapterization of the Fieldwork Report	15	15
Summary / Findings / Summation	5	5
Works Cited / Work Consulted / References / Annexures / Footnotes	10	10
Relevance of the Fieldwork to social needs	5	5
	60	60

SEMESTER – V

Course Title	FOOD SERVICE MANAGEMENT
Total Hrs.	75
Hrs./Week	5
Course Code	21UCND51
Course Type	DSC -VII
Credits	4
Marks	100

General Objectives:

To help the students to

- ❖ Enable the students to understand the food service operations.
- ❖ For proper management of services in catering industries.
- ❖ To learn about different food service equipment.

Course Objectives:

CO.	The learners will be able to:
CO-1	Gain knowledge about various types of food Service
CO-2	Understand the principles and functions of management
CO-3	Understand personnel management, financial management and legal aspects of catering
CO-4	Realize the importance of sanitation and hygiene in food service institution.
CO-5	Study different administrative qualities and management in institutions.

Unit - I Management and organization

Location and Layout for Kitchen, work centers, Structural features

Storage spaces – location, types of storage, layout

Service areas – location, layout

Unit - II Management and Equipments

Tools of Management – organizational chart, job description, job specifications, Job analysis, work and time schedule

Equipments – classification, selection, care and maintenance

Unit - III Food Service Management

Procedure for purchasing, receiving and storage

Types of menu, Style of service – waiter service, self service, vending and mobile catering.

Standardization of recipes

Portion control and utilization of left overs.

Unit IV Personnel Management

Recruitment - sources, procedure, selection, steps in selection

Induction - methods of induction, training.

Unit V Financial Management

Food cost, factors responsible for losses, method of controlling food cost.

Book keeping, advantages of double entry system, book of accounts, purchase book, sales book, purchase return book, sales return book, journal and balance sheet.

References:

1. Mohiniseti, Catering management and Integrated approach, Wiley western Ltd New Delhi, 1993.
2. West BB Wood L. Harger V.F and shugartG, food science in institutions John willey and sons, New York,(1993)

Course Outcomes

CO. No.	Upon completion of the course, the students will be able to:	PSOs Addressed	Cognitive level
CO-1	Explain the location and layout of kitchen, storage and service areas.	1,2	Understanding
CO-2	Discuss the different tools and equipments in food service management.	1, 2	Understanding, Analyzing
CO-3	Discover the different styles of services and purchasing procedures.	2 & 3	Analyzing
CO-4	Understand the recruitment and training process.	3,4,5	Understanding
CO-5	Identify different book keeping methods and food cost control.	1,2, 3	Evaluating

Relationship Matrix

Semester	Course Code	Title of the Course				Hours	Credits			
V	21UCND51	Food Service Management				5	4			
Course Outcomes (COs)	Programme Learning Outcomes (PLOs)					Programme Specific Outcomes (PSOs)				
	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO-1	✓	✓		✓		✓	✓			
CO-2	✓	✓	✓	✓		✓	✓			
CO-3	✓	✓		✓			✓	✓		
CO-4	✓	✓	✓	✓				✓	✓	✓
CO-5	✓	✓	✓	✓		✓	✓	✓		
	Number of matches (✓) = ...30.... Relationship = Medium									

SEMESTER –V

Course Title	HOUSING AND INTERIOR DESIGN
Total Hrs.	60
Hrs./Week	4
Course Code	21UCND52
Course Type	DSC- VIII
Credits	4
Marks	100

General Objective:

This course covers the principles of Family Resource Management, Principles and elements of design.

Course Objectives:

CO.	The learners will be able to:
CO-1	Understand the basic designs and art.
CO-2	Gain a basic knowledge of planning and constructing a house
CO-3	Attain a thorough knowledge of understanding values and goals in house keeping
CO-4	Illustrate the colour harmonies
CO-5	Create different types of flower arrangement

UNIT – I **Housing**

Functions of the house and its environment

House planning – site selection, factors to be considered, features of a house contributing to livability, orientation, grouping, roominess, lighting and ventilation, storage facility, privacy, flexibility, sanitation and economy, House plans – low, middle and high income groups

UNIT – II **Care and maintenance of house**

Care and maintenance of house and its surroundings.

Daily, weekly and periodical cleaning to keep the house in good condition.

Insect and pest control – preventive and remedial measures to be adopted.

UNIT – III **Elements and Principles of Design**

Elements of design – Line, Form, Texture, Shape, Direction, Design Principles of Design – Proportion, Balance, Harmony, Emphasis,

UNIT – IV **Colour**

Qualities of Colour – hue, value, intensity of colours and emotions, advancing and receding colours. Prang Colour Chart

UNIT – V **Flower Arrangement and Accessories**

Selection, use and care of picture and wall hangings

Flower arrangement – Principles, types of flower arrangement (Mass, Japanese, L – Shaped, Triangle, Crescent, Fan, Inverted U, Inverted V and Floating), Accessories used for flower arrangement

Textbook:

1. Stella Soundararaj. A Textbook of House hold Arts, Orient Longmans, Bombay – 1968.

References:

1. Deshpande, R.S., Modern Ideal Homes for India – United Book Corporations, Poone – 1971.
2. Margaret Kaye. A. A Students hand book of House wifery, J.M. Dent Sons Ltd., London.
3. Paulena Nickell, Jean Muir Dorsey – Management in Family Living, Wiley Eastern Private Ltd

Course Outcomes

CO.	Upon completion of the course, the students will be able to:	PSOs Addressed	Cognitive level
CO-1	Determine the basic elements of design and principles of design	1,2,3	Understanding
CO-2	Apply prang's colour scheme in housing.	1, 2	Applying
CO-3	Categorize the best elements and principles of design for house planning.	2 & 3	Analyzing
CO-4	Outline the care and maintenance of interior	2& 3	Evaluating
CO-5	Create different styles of flower arrangement	1,2, 3,4	Creating

Relationship Matrix

Semester	Course Code	Title of the Course				Hours	Credits			
V	21UCND52	HOUSING AND INTERIOR DESIGN				60	4			
Course Outcomes (COs)	Programme Learning Outcomes (PLOs)					Programme Specific Outcomes (PSOs)				
	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO-1	✓	✓	✓	✓		✓	✓	✓		
CO-2	✓	✓	✓	✓		✓	✓			
CO-3	✓	✓	✓	✓			✓	✓		
CO-4	✓	✓	✓	✓			✓	✓		
CO-5	✓	✓	✓	✓		✓	✓	✓	✓	
	Number of matches (✓) = ...33.... Relationship = Medium									

SEMESTER – V

Course Title	FOOD PRESERVATION
Total Hrs.	60
Hrs./Week	4
Course Code	21UCND53
Course Type	DSC - IX
Credits	4
Marks	100

General Objective:

To enable the students, understanding the process of food preservation and new technologies in food preservation

Course Objectives:

CO.	The learners will be able to:
CO-1	Understand the basic and traditional concept of food preservation
CO-2	Gain knowledge about preservation using low temperature
CO-3	Apply learning of making food products using sugar as preservatives
CO-4	Illustrate different food preservation methods using chemicals and salt
CO-5	Learn new methods and technologies of food preservation

Unit I Introduction to Food Preservation

Need and Importance of food preservation and use of high temperature in preservation. Basic principles of food preservation. Preservation by the use of high temperature-canning, steps involved in canning, Types of cans, Spoilage encountered, HTST (flask & holding method) Preservation by removal of moisture- Sun drying and dehydration, merits and demerits.

Unit II Preservation by Use of Low Temperature

Refrigeration- Advantages, factors to be considered in low temperature, Common spoilage of low temperature preservation. Refrigeration load. Preservation by use of very low temperatures-freezing, difference between refrigeration and freezing, Methods of freezing-Freeze drying and dehydro freezing- advantages. Steps involved in freezing common foods and spoilages

Unit III Preservation by Using Sugar

Sugar Concentrates-Principles of gel formation, Preparation of jam, jelly, marmalades, Preserves, Candies, Glazed and Crystallized fruits, fruit product order specification. Problem encountered and spoilage of sugar preserved foods. Preparation of squashes, syrup, and fruit juices, RTS.

Unit IV Preservation by Using Chemicals, Salt and Fermentation

Chemical Preservation-Definition, role of preservation, permitted Preservatives. Pickling-Principles involved and types of pickles, definition, advantages and types of fermentation. Common fermented foods- wine and cheese making

Unit V Preservation by Irradiation

Irradiation – Advantages and properties of irradiation. Mechanism, effect of food, permitted doses, Dose determination factors of irradiation

Textbook:

1. Siva Sankar.B. Food Processing and Preservation. 1st Edition. PHI Learning. ISBN: 9788120320864.(2009)

References:

1. Nrmann Desrosier. The Technology of Food Preservation. MedtechPublishers.ThirdEdition.ISBN: 9789386479235. (2018)
2. RamaswamyArindam. Food Preservation. Oxford Book Company. ISBN: 978980179124.
3. Srivastava and Sanjeev Kumar. Fruits and Vegetable Preservation. Principles and Practices. Third Edition.CBS Publishers and Distributors.(2000)
4. SubulakshmiShobaA Udupi. Food Processing and Preservation. New Age International Publishers.(2006)
5. Vijay Kader and Kumar. Preservation and Processing of Fruits and Vegetables. Kalyani Publishers. (2000)

Course Outcomes

CO.	Upon completion of the course, the students will be able to:	PSOs Addressed	Cognitive level
CO-1	Prioritize the importance and principles of food preservation.	1,2	Evaluating
CO-2	Formulate the preservation of foods low temperature	1,2,3,4	Remembering
CO-3	Understand the method of food preservation by using sugar	1,2,3	Understanding
CO-4	Interpret the use of chemical preservatives and fermentation technology	2,3,4	Understanding
CO-5	Discover the permitted doses of irradiation in foods.	2,3,5	Remembering

Relationship Matrix

Semester	Course Code	Title of the Course				Hours	Credits			
V	21UCND53	FOOD PRESERVATION				60	4			
Course Outcomes (COs)	Programme Learning Outcomes (PLOs)					Programme Specific Outcomes (PSOs)				
	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO-1	✓	✓	✓	✓		✓	✓			
CO-2	✓	✓	✓	✓		✓	✓	✓	✓	
CO-3	✓	✓	✓	✓		✓	✓	✓		
CO-4	✓	✓	✓	✓			✓	✓	✓	
CO-5	✓	✓	✓	✓			✓	✓		✓
	Number of matches (✓) = ...35.... Relationship = High									

SEMESTER – V

Course Title	FOOD SERVICE MANAGEMENT & HOUSING AND INTERIOR DESIGN PRACTICALS
Total Hrs.	60
Hrs./Week	4
Course Code	21UCND5P1
Course Type	PRACTICAL – V
Credits	2
Marks	100/2

General Objective:

This course covers the origin and development of food service in hotels, restaurants, and institutions, importance of management at individual and family levels

Course Objectives :

CO.	The learners will be able to:
CO-1	Provide friendly and welcoming atmosphere.
CO-2	Provide professional, hygienic, and attentive service.
CO-3	Select and use different food production equipment
CO-4	Learn how to efficiently arrange space in interiors and apply the design fundamentals effectively in an interior design setting
CO-5	Care and maintain the household appliances

FOOD SERVICE MANAGEMENT

1. GLASSES - Types and Capacity of glasses - Table service using different glasswares
2. Dining Table - Laying the Dining table
3. Receiving Guest and taking orders - Types of services
4. Types of table settings
5. Techniques in napkin folding - Professional napkin folding
6. Different types of equipments

HOUSING AND INTERIOR DESIGN

1. Visit to hotels to obtain knowledge on interior decoration and house keeping
2. Draw the house plan for Low, Middle and High income groups
3. Preparation of colour chart
4. Different types of Flower arrangement

- Mass arrangement
 - Japanese
 - Triangle
 - L - Shaped
 - U- Shaped
 - Crescent
 - Floating
5. Demonstration on wall hangings and picture mounting
 6. Preparation of Greeting Card, posters, menu card, invitations, duty chart
 7. Living room arrangement
 8. Rules to be followed to put curtains

Course Outcomes

CO.	Upon completion of the course, the students will be able to:	PSOs Addressed	Cognitive level
CO-1	Understand different types of food services	1,4,5	Understanding
CO-2	Describe the techniques in settings and service	1,2,4	Applying
CO-3	Experiment with color chart.	1,4,5	Analyzing
CO-4	Construct different house plans.	1,4,5	Evaluating
CO-5	Demonstrate various types of flower arrangements.	1,4,5	Creating

Relationship Matrix

Semester	Course Code	Title of the Course					Hours	Credits		
V	21UCND5P1	Food Service management and Housing & Interior design practicals					60	2		
Course Outcomes (COs)	Programme Learning Outcomes (PLOs)					Programme Specific Outcomes (PSOs)				
	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO-1	✓	✓	✓		✓	✓			✓	✓
CO-2	✓	✓	✓		✓	✓	✓		✓	
CO-3	✓	✓	✓		✓	✓			✓	✓
CO-4	✓	✓	✓		✓	✓			✓	✓
CO-5	✓	✓	✓		✓	✓			✓	✓
	Number of matches (✓) = 35 Relationship = High									

SEMESTER – V

Course Title	FOOD PRESERVATION PRACTICAL
Total Hrs.	60
Hrs./Week	4
Course Code	21UCND5P2
Course Type	PRACTICAL - VI
Credits	2
Marks	100/2

General Objective:

This course covers the basics, methods and techniques in food preservation, entrepreneurship skill in new product development.

Course Objectives:

CO.	The learners will be able to:
CO-1	Understand the basic principles in food preservation
CO-2	Prepare jam& jelly, fruit Squashes, pickles
CO-3	Make use of seasonal fruits and vegetables
CO-4	Illustrate the techniques in food preservation
CO-5	Create skill in new product development

1. Preparation of Jam

- a) Apple
- b) Pineapple
- c) Papaya
- d) Mixed Fruit jam

2. Preparation of Jelly

- a) Guava
- b) Synthetic Jelly

3. Preparation of Squash

- a) Pineapple
- b) Grapes
- c) Orange
- d) Rose syrup

4. Preparation of Sauces

- a) Tomato
- b) Chilly

5. Preparation of Pickles

- a) Ginger
- b) Garlic
- c) Tomato
- d) Fish
- e) Mixed Vegetables

- f) Green Chilly
- g) Mango
- 6. Preparation of Ketchup
- 7. Preparation of Cocktail
- 8. Preparation of preserves
 - a) Ginger Murappa
 - b) Tutti-frutti

- 9. Preparation of Fruit popsicles
- 10. Preparation of Seasonal fruit ice creams

Course Outcomes

CO.	Upon completion of the course, the students will be able to:	PSOs Addressed	Cognitive level
CO-1	Make use of various seasonal fruits for making jams.	1,2,3,5	Understanding
CO-2	Construct various methods of preparing fruit jellies.	1, 2,3	Applying
CO-3	Develop methods of preparing natural beverages.	1, 2 & 3	Analyzing
CO-4	Show the techniques of making pickles.	2& 3	Evaluating
CO-5	Formulate fruit preserves, sauces and ketchups, popsicles & ice creams.	1,2,3,4,5	Creating

Relationship Matrix

Semester	Course Code	Title of the Course				Hours	Credits			
V	21UCND5P2	FOOD PRESERVATION PRACTICALS				60	2			
Course Outcomes (COs)	Programme Learning Outcomes (PLOs)					Programme Specific Outcomes (PSOs)				
	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO-1	✓	✓	✓	✓		✓	✓	✓	✓	✓
CO-2	✓	✓	✓	✓		✓	✓	✓	✓	
CO-3	✓	✓	✓	✓		✓	✓	✓	✓	
CO-4	✓	✓	✓	✓			✓	✓	✓	
CO-5	✓	✓	✓	✓		✓	✓	✓	✓	✓
	Number of matches (✓) = ...41.... Relationship = High									

SEMESTER – V

Course Title	FUNCTIONAL FOODS AND NUTRACEUTICALS
Total Hrs.	60
Hrs./Week	4
Course Code	21UEND51A
Course Type	DSE-IA
Credits	4
Marks	100

General Objective:

To help the students to

- ❖ To enable the students to understand the functional foods and its components.
- ❖ To Understand the metabolic activities of various functional foods.
- ❖ To know Dietary management of functional foods in health and diseases.
- ❖ To learn about different bioactive compounds in functional foods.

Course Objectives:

Co.No.	The learners will be able to:
CO-1	Explain the basics of functional foods and its components.
CO-2	Summarize the different types of plant animals and marine sources.
CO-3	Exploring and identifying the different kinds of phytochemicals used in the treatment of diseases.
CO-4	Understand different role of probiotic, prebiotic and functional foods.
CO-5	Utilize and record the consumer response towards functional foods.

UNIT – I

Introduction to Functional Foods and Nutraceuticals

Functional foods and Nutraceutical – Definition, History of functional foods and classification.

Antioxidants, Major functions of phytonutrients.

UNIT – II

Functional Components from Plant Sources

Dietary Fibre – Types and sources

Carotenoids – Lycopene, Beta – carotene, Lutein and Zeaxanthin

Terpenes, Flavonoids, Isoflavonoids, Inositol Phosphates

Saponins and Tannins

UNIT – III

Functional Components from Animal Sources

Omega 3 and Omega 6 fatty acids

Minerals – Zinc , Selenium and Calcium

Dietary lipids – Conjugated Linoleic acid, Linoleic acid, Oleic Acid

UNIT – IV

Microbes as functional foods

Prebiotics – Definition, role of Prebiotics as functional ingredient

Probiotics – Definition, role of probiotics as functional ingredient

Symbiotics - Definition, role of synbiotics as functional ingredient

UNIT – V

Clinical Application of Functional Foods

Functional foods in oral gut health

Functional foods in Obesity and Cardiovascular disease

Functional foods in Nervous system

Functional foods in Bone health

Functional foods in Diabetes Mellitus

Functional foods in Cancer

References:

1. Gupta, R. C. Nutraceuticals: Efficacy, Safety and Toxicity. Academic Press, (2016)
2. ILSI Functional Foods beyond Basic Nutrition. Monograph Series, (2012).
3. Maria Saarela (2011).Functional Foods Concept to Product. Second Edition. Wood Head Publishing.ISBN:978-1-845690-0
4. Rotimi .E. Atuko Functional Foods and Neutraceuticals. ISBN: 978-1-4614-3479-5,(2012).
5. Vатtem, D.A. and Maitin V (2016). Functional Foods, Nutraceuticals and Natural Products, Concepts and Applications. DES Tech Publications,

Course Outcomes

CO. No.	Upon completion of the course, the students will be able to:	PSOs Addressed	Cognitive level
CO-1	Summarize the history, classification and major functions of functional foods and nutraceuticals.	1,2,3	Understanding
CO-2	Infer the functional components from plant sources.	1,2	Understanding
CO-3	Outline the functional components from animal sources.	1,2	Understanding
CO-4	Determine the role of microbes as functional foods.	1,2,3,4	Analyzing
CO-5	Discover the clinical application of functional foods.	2,3,4	Evaluating

Relationship Matrix

Semester	Course Code	Title of the Course				Hours	Credits			
V	21UEND51A	FUNCTIONAL FOODS ANDNUTRACEUTICALS				60	4			
Course Outcomes (COs)	Programme Learning Outcomes (PLOs)					Programme Specific Outcomes (PSOs)				
	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO-1	✓	✓	✓			✓	✓	✓		
CO-2	✓	✓	✓			✓	✓			
CO-3	✓	✓		✓		✓	✓			
CO-4	✓	✓	✓	✓		✓	✓	✓	✓	
CO-5	✓	✓	✓	✓			✓	✓	✓	
	Number of matches (✓) = ...31.... Relationship = Medium									

SEMESTER – V

Course Title	MEDICAL LABORATORY TECHNIQUES
Total Hrs.	60
Hrs./Week	4
Course Code	21UEND51B
Course Type	DSE I - B
Credits	4
Marks	100

General Objective:

Acquire skills and techniques in clinical laboratory procedures.

Course Objectives:

CO.	The learners will be able to:
CO-1	Understand the role of medical laboratory technician
CO-2	Assess the use of different glassware.
CO-3	Analyze the role of various equipments.
CO-4	Evaluate the techniques used in collection and Preservation of samples.
CO-5	Design the laboratory report.

UNIT 1

Organization of clinical laboratory and role of medical laboratory technician
Safety measures - clinic borne infection and personnel hygiene.

UNIT II

Incubator, Hot Air Oven, Water Bath -Anaerobic Jar, Centrifuge, Autoclave
Microscope - Fundamentals of Microscopy, Resolution & Magnification, Light Microscopy, Electron Microscopy-

UNIT III

Glassware – Description of Glassware, its use, handling and care
methods of measuring liquids.

UNIT IV

Requirement of Blood Collection - Blood collection - Phlebotomy - Sampling errors
Collection and preservation of biological fluids -Anticoagulants - Preservation of samples

UNIT V

Process of analysing the specimens generating the laboratory report.
Safe disposal methods.

References:

1. Fischbach, 2005. Manual of lab and diagnostic tests, Lippincott Williams Wilkins, New York.
2. Gradwohl, 2000. Clinical laboratory methods and diagnosis. (ed) Ales C. Sonnenwirth and leonardjarret, M.D.B.I., New Delhi.
3. J Ochei and Kolhatkar, 2002. Medical laboratory science theory and practice, Tata McGraw- Hill, New Delhi.
4. Kanai L. Mukherjee, 2007, Medical laboratory technology Vol.1.Tata McGraw Hill.

Course Outcomes

CO.	Upon completion of the course, the students will be able to:	PSOs Addressed	Cognitive level
CO-1	Understand the Organization of clinical laboratory and Safety measures.	1,2,3,4	Understanding
CO-2	Summarize the types and role of laboratory equipments.	1, 2,4	Applying
CO-3	Inspect the methods of measuring samples.	1& 3	Analyzing
CO-4	Conclude the importance of sample collection.	1.2,3,4	Evaluating
CO-5	Utilize the need for safe disposal methods.	1,2,4	Creating

Relationship Matrix

Semester	Course Code	Title of the Course					Hours	Credits		
V	21UEND51B	MEDICAL LABORATORY TECHNIQUES					60	4		
Course Outcomes (COs)	Programme Learning Outcomes (PLOs)					Programme Specific Outcomes (PSOs)				
	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO-1	✓	✓	✓	✓		✓	✓	✓	✓	
CO-2	✓		✓	✓		✓	✓		✓	
CO-3	✓	✓		✓		✓		✓		
CO-4	✓	✓	✓			✓	✓	✓	✓	
CO-5	✓		✓	✓		✓	✓		✓	
	Number of matches (✓) = ...32.... Relationship = Medium									

SEMESTER – V

Course Title	POST-HARVEST TECHNOLOGY
Total Hrs.	60
Hrs./Week	4
Course Code	21UEND51C
Course Type	DSE-IC
Credits	4
Marks	100

General Objectives:

Understanding on various changes occurring in fruits and vegetables during the pre-and post-harvest stages and to know the preservation and packaging on various technologies involved relevant to shelf life extension.

Course Objectives:

Co.No.	The learners will be able to:
CO-1	Understand the history and needs of post harvest technology.
CO-2	To understand the importance of post harvest management of foods
CO-3	Enable them to understand preservation techniques.
CO-4	To gain knowledge and experience in packaging of foods
CO-5	To gain knowledge of different enterprise in post harvest management.

UNIT I

History, Need and scope of post-harvest management, physiology of maturity, ripening and senescence

UNIT II

Importance of post harvest management of food, causes of pre and post harvest losses, Maturity, ripening and biochemical change after harvesting; Importance of micro organism in food industry

UNIT III

General principles and method of preservation; Principle and applications of modern techniques in food processing.

Unit1 IV

Post-harvest loss reduction technology including aspects of packaging storage, post-harvest treatment

UNIT V

Post harvest management as an enterprise 1. Processing sector in India and Kerala; An overview 2. Food laws and regulations 3. Setting up a processing 4. Fruit and Vegetable Processing, Equipment 5. Quality assurance and legislation.

References:

1. Spices-vol. II- Parry j.w.
2. Spice and condiments- pruthi J.S
3. Herbs and spices- rosemary hemphill
4. The book of spices – rosengarten ,F.andLivington Jr.
5. Spices and herbs for the food industry- Lewies, Y.S
6. Spices vol. I And II; tropical agril. Series- purse-glove, J.W.Brown E.G., Green c.l and robbins SRJ.

Course Outcomes

CO. No.	Upon completion of the course, the students will be able to:	PSOs Addressed	Cognitive level
CO-1	Explain the basics of Post harvest technology.	1	Understanding
CO-2	Identify the importance of post harvest technology	1, 2	Applying
CO-3	Discuss on the principles of preservation	2 & 3	Analyzing
CO-4	Discuss the post harvest treatment	2& 3	Evaluating
CO-5	Illustrate the role of post harvest management as an enterprise .	3	Creative

Relationship Matrix

Semester	Course Code		Title of the Course			Hours	Credits			
V	21UEND51C		Post-Harvest Technology			60	4			
Course Outcomes (COs)	Programme Learning Outcomes (PLOs)					Programme Specific Outcomes (PSOs)				
	PLO1	PLO 2	PLO3	PLO4	PLO5	PSO1	PSO 2	PSO 3	PSO 4	PSO5
CO-1	✓	✓	✓	✓		✓				
CO-2	✓	✓	✓	✓		✓	✓			
CO-3	✓	✓	✓	✓			✓	✓		
CO-4	✓	✓	✓	✓			✓	✓		
CO-5	✓	✓	✓	✓				✓		
	Number of matches (✓) = ...28.... Relationship = Medium									

SEMESTER – V

Course Title	INTRODUCTION TO TEXTILES
Total Hrs.	60
Hrs./Week	4
Course Code	21UEND52A
Course Type	DSE – IIA
Credits	4
Marks	100

General Objective:

This course covers the science of Textiles, techniques involved in garment construction.

Course Objectives:

CO.	The learners will be able to:
CO-1	Learn about the production and formation of fabric through various processes
CO-2	Select clothing appropriate for various family members.
CO-3	. Analyse the quality parameters of various fiber
CO-4	Explain various types of fabric forming methods.
CO-5	Develop innovative and creative fashion, home and contract products for diverse textile markets

Unit - I FIBER

Fiber - Definition - Classification of fiber - Natural fiber - Cotton - Silk - Wool - Characteristics - Identification of fiber - Use and care of Natural fibers - Manmade fibers - Rayon - Nylon - Polyester - Characteristics - Use and care of manmade fiber.

Unit - II YARN

Yarn - Definition - Forms of Yarn - Yarn twist - Yarn count - Types of yarn - Spun yarn - Characteristics - Filament yarn - Characteristics - Textured yarn - Texturizing process - Novelty yarn - Types.

Unit - III WEAVING

Weaving - Warp and Weft - Definition - Basic weaving operation - steps involved in weaving - loom operation - Classification of loom - Shuttle loom - Shuttle less loom - Types of weaves - Plain weave - Twill weave - types - Satin weave - Characteristics.

Unit - IV FINISHES

Finishes - Definition - objectives - Classification - Aesthetic finishes - functional finishes -

Sizing - Calendaring - Types - Mercerizing - Types of mercerization - Advantages

Unit - V PRINTING AND DYEING

Printing - Definition - Styles of Printing - Printing process - Methods - Block, Roller, Screen, Stencil, Dyeing, Tie and dye, Batik printing - steps involved in different methods of printing.

Dyes – Definition, classification Synthetic dyes; basic, acid, direct, disperse, reactive, vat, sulfur dyes and properties Dyeing techniques; Stock, yarn, piece, solution, cross and garment dyeing)

Textbook:

Seema Sekhri, Textbook of Fabric science, Fundamentals to finishing, PHI Learning Private limited, New Delhi, (2011).

References:

1. Sreenivasamurthy H V - Introduction to Textile Fibres, The Textile Association India, Mumbai, (1998)
2. Deepali Rastogi and Sheetal Chopra, (2017). Textile Science, Orient Black-Swan Private Limited, Hyderabad.
3. Bernard P. Corbman, (2005). Textiles Fiber to Fabric, Sixth edition, McGraw Hill International Editions, New Delhi.

Course Outcomes

CO.	Upon completion of the course, the students will be able to:	PSOs Addressed	Cognitive level
CO-1	Understand the basics of fiber and its classification.	1,2	Understanding
CO-2	Summarize the different types of yarn	1,4,5	Applying
CO-3	Explore and identify the method of weaving	1,2,4,5	Analyzing
CO-4	Categorize different type of finishes applied in fabrics	1,4,5	Evaluating
CO-5	Design different methods of fabric printing	1,4,5	Creating

Relationship Matrix

Semester	Course Code	Title of the Course				Hours	Credits			
V	21UEND52A	Introduction to Textiles				60	4			
Course Outcomes (COs)	Programme Learning Outcomes (PLOs)					Programme Specific Outcomes (PSOs)				
	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO-1	✓	✓				✓	✓			
CO-2	✓	✓				✓			✓	✓
CO-3	✓	✓	✓		✓	✓	✓		✓	✓
CO-4	✓	✓	✓		✓	✓			✓	✓
CO-5	✓	✓	✓		✓	✓			✓	✓
	Number of matches (✓) = 31 Relationship = Medium									

SEMESTER – V

Course Title	FOOD PRODUCT DEVELOPMENT
Total Hrs.	60
Hrs./Week	4
Course Code	21UEND52B
Course Type	DSE - IIB
Credits	4
Marks	100

General Objective:

The course covers the need and steps of formulation for new product development.

Course Objectives:

CO.	The learners will be able to:
CO-1	Understand the need for new product development.
CO-2	Assess the importance of Formulation of new products and ideas.
CO-3	Analyze the Technology for new products.
CO-4	Evaluate the production trials for new product development.
CO-5	Design the costing and economic evaluation of developed products.

UNIT I

Introduction and scope, need, importance and objective of formulation for new product development.

UNIT II

Formulation of new product, ideas, business philosophy and strategy of new product, formulation based on sources availability and cost competitiveness for concept developments of new products

UNIT III

Technology for new product, adaptable technology and sustainable technology for standardized formulation for process development.

UNIT IV

Scale up and trials, process control parameters and scale-up, production trials for new product development at lab and pilot scale

UNIT V

Marketing, economics of new product, commercialization and launching, market testing and marketing plan, costing and economic evaluation of developed products, commercialization/ product launch for marketing

References:

1. New food products design and development: Beckley, Blackwell publishing oxford UK
2. Sensory and consumer research In food Moskowitz, Blackwell product design and development publishing oxford UK

Course Outcomes

CO.	Upon completion of the course, the students will be able to:	PSOs Addressed	Cognitive level
CO-1	Understand the importance of formulation for new product development.	1,2,3,4	Understanding
CO-2	Investigate the business philosophy and strategy of new product	1, 2,3,4,5	Applying
CO-3	Illustrate the Scale up and trialsfor new product development.	1, 2,3,4,5	Analyzing
CO-4	Evaluate the adaptable technologies and sustainable technology for standardized formulation for new products.	1, 2,3,4,5	Evaluating
CO-5	Design the product launch and marketing.	1,2,3,4	Creating

Relationship Matrix

Semester	Course Code		Title of the Course			Hours	Credits			
V	21UEND52B		DEVELOPMENT OF FOOD PRODUCT			60	4			
Course Outcomes (COs)	Programme Learning Outcomes (PLOs)					Programme Specific Outcomes (PSOs)				
	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO-1	✓	✓	✓	✓		✓	✓	✓	✓	
CO-2	✓	✓	✓	✓		✓	✓	✓	✓	✓
CO-3	✓	✓	✓	✓		✓	✓	✓	✓	✓
CO-4	✓	✓	✓	✓		✓	✓	✓	✓	✓
CO-5	✓	✓	✓	✓		✓	✓	✓	✓	
	Number of matches (✓) = ...43.... Relationship = High									

SEMESTER – V

Course Title	HOSPITAL DIETETIC COUNSELLING
Total Hrs.	60
Hrs./Week	4
Course Code	21UEND52C
Course Type	DSE-II C
Credits	4
Marks	100

General Objectives

Understand the psychology of the patient and to develop diet counseling skills.

Course Objectives:

Co.No.	The learners will be able to:
CO-1	Understand the role of dietitian in hospital
CO-2	To understand the importance of diet counselling skills
CO-3	Enable them to understand counselling skills.
CO-4	To gain knowledge and experience in therapeutic relationship
CO-5	To gain knowledge of different assessment of diet

UNIT I:

Role of a dietician in a hospital and community, team approach to nutritional care, ethical code and responsibility. Defining features of counselling psychology.

UNIT II:

Diet counselling skill: Tactics and techniques of counselling-evaluating and understanding the clients attitude, how to identify and express your feelings towards the client, utilizing proper counselling techniques-non-verbal behaviour, verbal behaviour, covert behaviour.

UNIT III:

Concepts and principles in communication and their application in developing skills in counselling. Use of communication aids, communication and interviewing skills.

UNIT IV:

Therapeutic relationships: psychology of feeding the patients-Assessment of needs, education of the patient and follow up and establishing rapport with the patient and the family member,

UNITV:

Diagnosis and assessment: Eliciting clinical information-medical history, assessment of diet profile, techniques of obtaining relevant information; dietary diagnosis-24 hour recall method, food diary, list of food likes and dislikes, lifestyle; interpreting clinical information, case study assessment and evaluation.

References:

- 1) Gelso Charles,J.and Fretz Bruce, R.Counselling Psychology, PRISM Indian edition Harcourt Brace College Publishers,1995
- 2) Srilakshmi, B. Dietetics New Age International(P) Ltd,1997

Course Outcomes

CO. No.	Upon completion of the course, the students will be able to:	PSOs Addressed	Cognitive level
CO-1	Explain the role of dietitian	1	Understanding
CO-2	Identify the importance of dietetic counselling skills	1, 2	Applying
CO-3	Discuss on the principles of communication	2, 3	Analyzing
CO-4	Describe the therapeutic relationship	2, 3	Evaluating
CO-5	Illustrate the assessment methods of diet counselling.	3	Creating

Relationship Matrix

Semester	Course Code	Title of the Course				Hours	Credits			
V	21UEND52C	Hospital Dietetic Counselling				60	4			
Course Outcomes (COs)	Programme Learning Outcomes (PLOs)					Programme Specific Outcomes (PSOs)				
	PLO 1	PLO 2	PLO3	PLO 4	PLO 5	PSO1	PSO 2	PSO3	PSO 4	PSO 5
CO-1	✓	✓	✓	✓		✓				
CO-2	✓	✓	✓	✓		✓	✓			
CO-3	✓	✓	✓	✓			✓	✓		
CO-4	✓	✓	✓	✓			✓	✓		
CO-5	✓	✓	✓	✓				✓		
	Number of matches (✓) = ...28.... Relationship = Medium									

SEMESTER – VI

Course Title	CLINICAL BIOCHEMISTRY
Total Hrs.	60
Hrs/ Week	4
Course Code	21UCND61
Course Type	DSC– X
Credits	4
Marks	100

General Objective:

To study different test for diseases, biochemical composition of blood, significance of macronutrient metabolism, and thereby understand the implications of disorders resulting from these.

Course Objectives:

CO.	The learners will be able to:
CO-1	Understanding and applied knowledge of the theory and practice of clinical biochemistry
CO-2	Understanding biochemical investigations are employed to develop a clinical diagnosis
CO-3	Necessary professional and research skills to promote lifelong learning and career development.
CO-4	Review the information from each category of tests and develop a protocol for disease diagnosis
CO-5	Create awareness of different lifestyle diseases increasingly found in present day

Unit - I -Blood Sugar

Level of blood glucose – glucose in normal conditions, Maintenance of blood glucose level, Ketosis, Diabetic Coma. Inborn errors of Carbohydrate metabolism - Pentosuria, Galactosuria, Glycosuria and Glycogen storage diseases –Definition, causes, symptoms, treatment and prevention

Unit – II - Blood Lipids

Types – TC, LDL, HDL, VLDL and level of lipids in blood. Determination of serum cholesterol. Hyper and hypolipidemia- Definition, causes, symptoms, treatment and prevention

Unit - III - Plasma Protein

Plasma - Functions and determination of total plasma proteins. Inborn errors of amino acid metabolism - Phenyl ketonuria, Albiminism, Alkaptonuria and Maple syrup disease – Definition ,causes, symptoms, treatment and prevention.

Unit - IV - Gastric Disorders

Bile-Introduction, bile Salt- Functions, normal values,formations of bile acids, and bile pigments from haemoglobin, Test for liver function- Definition,Types Importance, procedure

Unit - V - Urine

Urine examination - their significance in health and disease. Test for kidney function - Creatinine clearance test- Definition , Importance , procedure , urea clearance -Definition , Importance, procedure, insulin clearance- Definition , Importance, procedure Dye test - Definition , Importance, procedure and Dilution Test – Definition , Importance , procedure

Textbook:

Ambika, S. (2006), *Fundamentals of Bio chemistry for Medical students*, Walter Kluwer India Pvtltd ,Olten .

References:

- 1.Cantrow and Trumper , (1975), *Clinical Bio-chemistry*, M.A.S. Saunders Co, Chennai .
- 2.Veera K.L, (2006), *Bio Chemistry*, MJP Publisher, Chennai.
- 3.William J Marshall,(2004). *Clinical Bio-chemistry*, 5th edition, MOS Pvtltd , USA.
4. Allan, G . (2008), *Clinical Bio-chemistry*, Churchill liviston publication, NewYork.

Course Outcomes

CO.	Upon completion of the course, the students will be able to:	PSO Addressed	Cognitive level
CO-1	Understand the level of blood sugar and inborn errors of carbohydrate metabolism.	1, 2,5	Understanding
CO-2	Identify the types and levels of lipids in blood.	1,2,5	Applying
CO-3	List out plasma proteins and inborn errors of amino acid metabolism.	2,5	Analyzing
CO-4	Determine about the various functions of bile acids and liver function test.	1,2,5	Evaluating
CO-5	Discuss the various tests for kidney function.	1,2,5	Creating

Relationship Matrix

Semester	Code		Title of the course			Hours		Credits		
VI	21UCND61		Clinical Biochemistry			60		4		
Course Outcomes (COS)	Programme Out Come (PLOs)					Programme Specific Outcomes (PSOs)				
	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO-1	✓	✓	✓	✓		✓	✓			✓
CO-2	✓	✓	✓	✓		✓	✓			✓
CO-3	✓	✓	✓	✓		✓	✓			✓
CO-4	✓	✓	✓	✓		✓	✓			✓
CO-5	✓	✓	✓	✓		✓	✓			✓
	Number of matches (✓) = ...35.... Relationship = High									

Semester – VI

Course Title	COMMUNITY NUTRITION AND EXTENSION EDUCATION
Total Hrs.	60
Hrs./Week	4
Course Code	21UCND62
Course Type	DSC - XI
Credits	4
Marks	100

General Objective:

To help the students to

- Able to familiarize the concept of Public Health and community Nutrition.
- Develop nutrition education aids for specific target groups.
- Analyse the role of National and International organization to reduce malnutrition.
- Articulate the Research and Educational Institution in Community Nutrition.

Course Objectives:

Co.No.	The learners will be able to:
CO-1	Familiarize the concept of Public Health and Community Nutrition
CO-2	Explain about the direct and Indirect Nutritional assessment method
CO-3	Apply the Nutrition Education Methods at community level
CO-4	Analyse the Supplementary feeding Programme in India and Role of National and International Agency to eradicate malnutrition.
CO-5	Discuss the knowledge on Various Research and Educational Institution in Community Nutrition.

UNIT- I: CONCEPT OF COMMUNITY NUTRITION AND EXTENSION EDUCATION

Concept of Community Nutrition- Goals, Objectives – Meaning of Community Health- Factors affecting Community Health and Concept – Definition of Extension Education . Nutrition Education – Meaning and Importance – Channels of Nutrition Education of the Community – Nutrition Education Methods.

UNIT – II: ASSESSMENT OF NUTRITIONAL STATUS

Nutritional Status – Meaning-Direct and Indirect Methods

Direct Methods- Anthropometric-Biochemical-Clinical-Diet survey

Indirect Methods –Vital health statistics

UNIT – III: ROLE OF NATIONAL AND INTERNATIONAL AGENCIES IN COMBATING NUTRITIONAL DEFICIENCY

PMMVY – Pradhan MantriMatruVandanaYojana - POSHAN Abhiyaan - ANP – SNP - ICDS – Mid Day Meal- Balwadi Nutrition Programme – Role of National and International Agencies –NIN, ICMR, ICAR, CFTRI.

UNIT- IV: EXTENSION TEACHING METHODS

Extension Teaching Methods - Meaning- Function- Classification. Selection, Use and Combination of Extension Methods. Edgar Dale's Cone of Experience.

UNIT- V: FIVE YEAR PLAN IN INDIA & WOMEN EMPOWERMENT SCHEMES

Important Rural Development Programmes and Schemes launched under different Five Year Plans- Community Development Programme (CDP).WOMEN EMPOWERMENT SCHEMES – UJJAWALA, Women Helpline Scheme, SWADHAR, Mahila E-Haat, Mahila Shakti Kendra, One-Stop Centre Scheme, Beti Bachao Beti Padhao – Deendayal Antayodaya Yojana, Pradhan Mantri Kaushal VikasYojna. Deen Dayal Upadhyay Grameen Kaushal Yojna.

References:

1. SuryatapaDas , Textbook of Community Nutrition. 2nd Ed. Academic Publishers, Kolkata, (2016).
2. Swaminathan.M. Advanced Text Book on Essentials of Food and Nutrition. Vol.II. 2nd Ed. The Bangalore printing & Publishing Co.Ltd.Bangalore, (2015).
3. Manoj Sharma, Paul W. Branscum, AshutoshAtri (2014). Introduction to Community and Public Health.Jossey-bass
4. Manju Patni (2020) Community Nutrition in India.

Course Outcomes

CO. No.	Upon completion of the course, the students will be able to:	PSOs Addressed	Cognitive level
CO-1	Understand the role of community Nutrition in Public Health.	1,4,5	Understanding
CO-2	Learn about Nutritional Assessment methods	1, 2,4	Analyzing
CO-3	Know about the nutrition programmes implemented by National and International level.	1,2,3,5	Understanding
CO-4	Educate the community with different methods	1,3,4,5	Applying
CO-5	Gain knowledge in women empowerment schemes	1,4,5	Understanding

Relationship Matrix

Semester	Course Code	Title of the Course				Hours	Credits			
VI	21UCND62	COMMUNITY NUTRITION AND EXTENSION EDUCATION				60	4			
Course Outcomes (COs)	Programme Learning Outcomes (PLOs)					Programme Specific Outcomes (PSOs)				
	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO-1	✓			✓	✓	✓			✓	✓
CO-2	✓		✓	✓	✓	✓	✓		✓	
CO-3	✓	✓		✓	✓	✓	✓	✓		✓
CO-4	✓		✓	✓	✓	✓		✓	✓	✓
CO-5	✓		✓	✓	✓	✓			✓	✓
	Number of matches (✓) = 36 Relationship = High									

SEMESTER – VI

Course Title	FOOD SAFETY AND QUALITY CONTROL
Total Hrs.	60
Hrs./Week	4
Course Code	21UCND63
Course Type	DSC - XII
Credits	4
Marks	100

General Objectives:

To help the students

- ❖ To enable the students to understand the concept of food safety and quality control.
- ❖ To understand the activities of various quality control procedures.
- ❖ For proper management of quality control in Industries.
- ❖ To learn about different food regulations act.

Course Objectives:

Co.No.	The learners will be able to:
CO-1	Explain the basics of food safety and good lab practices.
CO-2	Summarize the different types of quality control activities.
CO-3	Exploring and identifying the different methods of contaminations, adulteration and detection of food items.
CO-4	Understand different type of risk analysis in food industries.
CO-5	Utilize the different auditing methods and regulations in food industries.

UNIT-I:FOOD SAFETY

Food safety: definition, importance of food safety in food processing units-threats to safety of food supply.-Good lab practices-good hygiene practices-current challenges to food safety

UNIT-II:QUALITY CONTROL

Quality control: definition and principles of quality control. Need for quality control in food industry-Total quality control: definition and role of management, Quality Improvement Techniques and External Quality Control Activities-HACCP-Definition, Principles and guidelines for application of HACCP

UNIT- III:FOOD ISSUES

Contaminants - types of contaminants in food industries-Food borne infections and its transmission-prevention and control-Food adulteration-types of adulteration-method of evaluation.

UNIT- IV:RISK ANALYSIS AND AUDITING

Risk assessment-risk management-risk communication-risk analysis of dairy products-bakery products-meat products-Auditing: ISO 90001:2000, ISO 22000:2005, -role and responsibility of an auditor

UNIT- V: FOOD SAFETY REGULATIONS

Food Laws and Regulations-AGMARK, Food Safety and Standard Act 2011, FSSAI, P.F.A, F.P.O, BIS-Registration and licensing-Import and export of foods-Regulation of irradiated food-Regulation of special category of food- Labeling of a product-Food safety programs: Importance of the programs-pest control programs-water quality treatment-education and training programs

References:

1. Alok Kumar (2019). Fundamentals of Food Hygiene Safety and Quality. Dream Tech Publications. ISBN:978-9389307818
2. Devendra, K. B. and Priyanka, T (2006). An Introduction to Food Science and technology and Quality Management. Kalyani Publishers. ISBN: 81-272-2521-5.
3. FAO - Training Manual No.17/2 (2007). Prevention of post-harvest food losses: Fruits, Vegetables and Root crops. Daya Publishing House, Delhi.
4. Pulkit Mathur (2018).Food Safety and Quality Control. The Orient Black Swan Publishers.ISBN:978-93525873791
5. Srilakshmi (2010). Food Science. New age International 978-81-224-2724-0.

Course Outcomes

CO. No.	Upon completion of the course, the students will be able to:	PSOs Addressed	Cognitive level
CO-1	Explain the basics of food safety and good lab practices	1,2,3	Understanding, Remembering
CO-2	Determine the different types of quality control activities	1,2, 4	Evaluating
CO-3	categorize the different methods of contaminations. adulteration and detection of food items	3,4,5	Analysing
CO-4	Understand different type of risk analysis in food industries	2,4,5	Understanding
CO-5	Utilize the different auditing methods and regulations in food industries	1,3,4	Applying

Relationship Matrix

Semester	Course Code		Title of the Course			Hours		Credits		
VI	21UCND63		FOOD SAFETY AND QUALITY CONTROL			60		4		
Course Outcomes (COs)	Programme Learning Outcomes (PLOs)					Programme Specific Outcomes (PSOs)				
	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO-1	✓	✓		✓	✓	✓	✓	✓		
CO-2	✓		✓	✓	✓	✓	✓		✓	
CO-3	✓	✓						✓	✓	✓
CO-4	✓	✓	✓	✓	✓		✓		✓	✓
CO-5	✓	✓		✓	✓	✓		✓	✓	
	Number of matches (✓) = 34 Relationship = High									

SEMESTER – VI

Course Title	CLINICAL BIOCHEMISTRY PRACTICALS
Total Hrs.	60
Hrs./Week	4
Course Code	21UCND6P1
Course Type	PRACTICAL – VII
Credits	2
Marks	100/2

General Objective:

Discuss the fundamental biochemistry knowledge related to health and to explain clinical significance of the laboratory tests

Course Objectives:

CO.	The learners will be able to:
CO-1	Describe the qualitative and quantitative analysis of body fluids assist the clinicians in the diagnosis, treatment and prevention of the disease
CO-2	Understand the Clinical diagnosis, manufacture of various biological products,
CO-3	Identify the abnormalities in nutrient metabolism and their relationship to various diseases
CO-4	Analyze the Role of medical/Clinical laboratory
CO-5	Monitoring the development and spread of infectious and dangerous pathogens

1. Lab safety, introduction to clinical biochemistry
2. Qualitative analysis of urine for sugar
3. Qualitative analysis of urine for proteins
4. Qualitative analysis of urine for bile salts
5. Estimation of Serum Cholesterol
6. Estimation of Blood Glucose
7. Estimation of Blood Urea
8. A report on blood analysis techniques

Course Outcomes

CO.	Upon completion of the course, the students will be able to:	PSO Addressed	Cognitive level
CO-1	Estimate the urine for abnormal sugar.	1,2,5	Understanding
CO-2	Identify urine for protein and ketone bodies.	1,2,5	Applying
CO-3	Analyze the blood glucose and urea.	1,2,5	Analyzing
CO-4	Determine serum cholesterol.	1,2,5	Evaluating
CO-5	Create a report on blood analysis.	2,5	Creating

Relationship Matrix

Semester	Code		Title of the course			Hours	Credits			
VI	21UCND6P1		CLINICAL BIOCHEMISTRY PRACTICALS			60	2			
Course Outcomes (COS)	Programme Learning Out Come (PLOS)					Programme Specific Outcomes (PSOs)				
	PLO1	PLO2	PLO3	PLO4	PLO5	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO-1	✓	✓	✓	✓			✓	✓	✓	
CO-2	✓	✓	✓	✓			✓	✓	✓	
CO-3	✓	✓	✓	✓			✓	✓	✓	
CO-4	✓	✓	✓	✓			✓	✓	✓	
CO-5		✓	✓				✓	✓		
	Number of matches (✓) = 32 Relationship = Medium									

SEMESTER – VI

Course Title	COMMUNITY NUTRITION, EXTENSION EDUCATION AND FOOD SAFETY AND QUALITY CONTROL PRACTICALS
Total Hrs.	60
Hrs./Week	4
Course Code	21UCND6P2
Course Type	PRACTICAL - VIII
Credits	2
Marks	100/2

General Objectives:

To help the students to

- Prepare the poster on Vitamins, Minerals and Nutritional Deficiency.
- To expand the vision about the activities of ICDS, Balwadi and Oldage Home.
- To create insights about causes and symptoms of Malnutrition.
- Inculcate about wastewater and water purification plant.
- Prepare and organize programme on community nutrition among weaker section of people.

Course Objectives:

CO.	The learners will be able to:
CO-1	Prepare and use poster on Vitamins, Minerals and Nutritional deficiency during Nutrition Education.
CO-2	Develop reporting skill about ICDS, Balwadi and Oldage Home and also enhance knowledge functions and activities of it.
CO-3	Learn to Demonstrate the drama about malnutrition.
CO-4	Learn to compile songs for children
CO-5	Counsel the children's mental and Psychological problem and summarize as in the form of Case study Report.

COMMUNITY NUTRITION & EXTENSION EDUCATION

1. **Experiment :** Prepare a Poster of Fat Soluble Vitamins
2. **Experiment :** Prepare a Poster of Water Soluble Vitamins
3. **Experiment :** Prepare a Poster of Minerals
4. **Experiment :** Prepare a Poster of Nutritional deficiency diseases
5. **Experiment:** Prepare a Poster how will educate people with degenerative diseases(Health Education Programme)
6. **Experiment :** Prepare a Model of waste water treatment
7. **Experiment :** Visit to a water purification plant
8. **Experiment :** Organize a programme on awareness on Community Nutrition

FOOD SAFETY AND QUALITY CONTROL

1. Determining adulterants in various foods

Coffee -Turmeric - Sugar - Chilli powder - Tea Leaves - Pepper- Honey - Ghee - Asafoetida

2. Preparation of score card

3. Sensory evaluation of food

- Taste
- Texture
- Color
- Appearance
- Flavour

4. Egg quality test

5. Flour quality test

Course Outcomes

CO.	Upon completion of the course, the students will be able to:	PSOs Addressed	Cognitive level
CO-1	Gain knowledge on conducting Health Education programme	1, 3,5	Understanding
CO-2	Determine the various adulterants present in food.	1,3,4,5	Applying
CO-3	Examine the quality of egg and wheat flour.	1,2,3	Analyzing
CO-4	Develop score cards for sensory evaluation..	1,2	Evaluating
CO-5	Create awareness on community Nutrition	1,2	Creating

Relationship Matrix

Semester	Course Code	Title of the Course					Hours	Credits		
VI	21UCND6P2	Community Nutrition, Extension Education and Food Safety & quality control practicals					60	2		
Course Outcomes (COs)	Programme Learning Outcomes (PLOs)					Programme Specific Outcomes (PSOs)				
	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO-1	✓			✓	✓	✓		✓		✓
CO-2	✓			✓	✓	✓		✓	✓	✓
CO-3	✓	✓	✓			✓	✓	✓		
CO-4	✓	✓	✓			✓	✓			
CO-5	✓	✓	✓			✓	✓			
	Number of matches (✓) = 29 Relationship = Medium									

SEMESTER – VI

Course Title	FOOD PACKAGING
Total Hrs.	60
Hrs./Week	4
Course Code	21UEND61A
Course Type	DSE – IIIA
Credits	4
Marks	100

General Objective:

This course covers the importance of packaging, packaging materials, packaging laws and regulations.

Course Objectives:

CO.	The learners will be able to:
CO-1	Understand the labelling in food products
CO-2	Illustrate the need of special packaging methods.
CO-3	Gain Knowledge on types and uses of Flexible and rigid packaging material
CO-4	Examine the packaging material for fruits and vegetables
CO-5	Choose the appropriate packaging material for various food products

Unit :1 Food Packaging - Introduction

Food packaging: Definition, functions of packaging materials for different foods, characteristics of packaging material.

Labeling: Definition, types of ink and adhesive used in food packaging. Labeling regulation, bar coding, health claims, nutrition labeling, ingredients list.

Unit :2 Packaging Material

Flexible Packaging Materials- Paper, films, aluminium foils and laminations - Uses of flexible packaging materials as wrapper, pouches and sacks.

Unit : 3 Packaging Containers

Semi Rigid Packaging Materials - Aluminium containers, set up paper board cartons, folding paper board cartons, moulded pulp and plastic containers.

Rigid Packaging Materials- Glass containers, composite containers, and cans, aerosol containers, solid and corrugated fibre board containers.

Unit : 4 Packaging Material for fruits and Vegetables

Wooden boxes and crates - shipping containers - Fruits and Vegetables-Packaging requirements and packaging materials.

Unit : 5 Methods of Packaging

Packaging requirements and materials for chocolates, confectionaries, jam and jelly, snack foods chips .

Special Packaging Methods- Vacuum, gas and shrink packaging. Problems in packaging Product-package, compatibility, toxicity, tainting and corrosion.

General methods of disposing food package materials.

Textbook:

1. Margaret McWilliams, Experimental Foods Laboratory Manual, Prentice Hall, Inc. New Jersey. 2012

References:

1. Sachrow&Griffin, Food Packaging – AVI Publications
2. Kotchikness Food & Packaging Interaction – American Chemical Society
3. Robertson G.L. Food Packaging – New York, Marcell Dekker, INC
4. Bhatia S.C. Canning & Preservations of Fruits & Vegetables – New Delhi, India

Course Outcomes

CO.	Upon completion of the course, the students will be able to:	PSOs Addressed	Cognitive level
CO-1	Understand the principles of packaging	1,2	Understanding
CO-2	Know the importance of labelling in food products	1,2,3,4	Applying
CO-3	Impart comprehensive overview of the scientific and technical aspects of food packaging.	1,4,5	Analyzing
CO-4	Instill knowledge on packaging machinery, systems, testing and regulations of packaging.	2,3,4	Evaluating
CO-5	Create new techniques in food packaging transportation.	2,3,5	Creating

Relationship Matrix

Semester	Course Code		Title of the Course			Hours		Credits		
VI	21UEND61A		Food Packaging			60		4		
Course Outcomes (COs)	Programme Learning Outcomes (PLOs)					Programme Specific Outcomes (PSOs)				
	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO-1	✓	✓	✓			✓	✓			
CO-2	✓	✓	✓			✓	✓	✓	✓	
CO-3	✓	✓	✓	✓	✓	✓			✓	✓
CO-4				✓	✓		✓	✓	✓	
CO-5			✓	✓	✓		✓	✓		✓
	Number of matches (✓) = 31 Relationship = Medium									

SEMESTER - VI

Course Title	WOMEN'S HEALTH & NUTRITION
Total Hrs.	60
Hrs./Week	4
Course Code	21UEND61B
Course Type	DSE-IIIB
Credits	4
Marks	100

General Objective:

The course covers the role of nutrition in the maintenance of women's health.

Course Objectives:

CO.	The learners will be able to:
CO-1	Understand the Importance of Women's Health.
CO-2	Assess the importance of nutrition in women's lifecycle
CO-3	Analyze the Nature and use of Health care Delivery System for women..
CO-4	Evaluate the importance of Health Education special reference to rural women..
CO-5	Design the National Health Programmes and its impact on women.

Unit I

Concept and definition of nutrition- Common nutritional disorders among women and children and their preventive measures. Importance of Women's Health, Psycho social aspects of women's health.

Unit II

Normal nutrition through life cycle: Nutrition in adolescence, diet, Adolescent pregnancy, eating disorders, food consumption patterns in women, nutritional needs of elderly women, Nutrition for female athlete.

Unit III

Nature and use of Health Care Delivery System: Problems & Prospects Reproductive health and Reproductive rights. Nutrition and reproduction: Diet, menstrual cycle and sex steroid hormones, nutrition concern during pregnancy and lactation, nutritional concerns in pre and post-menopausal phase, hormone replacement therapy, use of oral contraceptives and nutrition.

Unit IV

Health Education special reference to rural women Family Welfare methods of Gender bias Practices.

Unit V

Health: Concept and definition, spread of sexually transmitted diseases, HIV/AIDS and its impact on women; preventive measures. Common Communicable diseases and their preventive measures, National Health Programmes

Textbooks:

1. Swaminathan, M. Hand book of Foods and Nutrition, Bappco Publishers (2010).
2. Srilakshmi. E. Nutrition Science, New Age International Publishers; sixth edition (2017).

3. Srilakshmi. E. Dietetics, New Age International Publishers; seventh multicolour edition (2014)

References:

1. Mahan, Kathleen L. Krause's Food, Nutrition and Diet Therapy, W.B.Saunders's, 11th Edition 2004
2. Gordon M. Wardlaw, Anne M. Smith contemporary Nutrition, Mc Graw – Hill International Edition, 2006
3. McGraw – Hill. Vishwannath M. Sardesai (), Introduction to clinical Nutrition, Marcel Dekker, Inc New York, 2003.
4. Roberta Larson Duyff. John Wiley & sons, Inc American Dietetic Association, complete food and Nutrition guide, 2nd edition 2002.

Course Outcomes

CO.	Upon completion of the course, the students will be able to:	PSOs Addressed	Cognitive level
CO-1	Acquaint with status of women in Family and Society	1,2,3	Understanding
CO-2	Understand the various factors influencing health and nutritional status of women	1, 2,3,4	Applying
CO-3	Plan and undertake various activities to improve the status of women	1,2 & 3	Analyzing
CO-4	Understand the implications of women's health on family, community and national development	1,2& 3	Evaluating
CO-5	Utilize the concept of national health programmes to improve women's health.	1,2	Creating

Relationship Matrix

Semester	Course Code		Title of the Course			Hours	Credits			
VI	21UEND61B		WOMEN’S HEALTH AND NUTRITION			60	4			
Course Outcomes (COs)	Programme Learning Outcomes (PLOs)					Programme Specific Outcomes (PSOs)				
	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO-1	✓	✓	✓	✓		✓	✓	✓		
CO-2	✓	✓	✓	✓		✓	✓	✓	✓	
CO-3	✓	✓	✓	✓		✓	✓	✓		
CO-4	✓	✓	✓	✓		✓	✓	✓		
CO-5	✓	✓	✓	✓		✓	✓			
	Number of matches (✓) = ...35.... Relationship = High									

SEMESTER - VI

Course Title	ENTREPRENEURSHIP DEVELOPMENT
Total Hrs.	60
Hrs./Week	4
Course Code	21UEND61C
Course Type	DSE-IIIC
Credits	4
Marks	100

General Objectives

Understand the process and procedures of setting up small enterprises and to develop entrepreneurship skills

Course Objectives:

Co.No.	The learners will be able to:
CO-1	Understand the definition of entrepreneurship.
CO-2	Understand the importance of employment promotion
CO-3	Enable them to understand project formulation
CO-4	Describe the innovation and creativity of problem solving
CO-5	Illustrate the legal issues of entrepreneurship.

UNIT I - Entrepreneurship

Definition, need, scope and characteristics of entrepreneurship, entrepreneurship development

UNIT II - Opportunities

Employment promotion, Identification of opportunities

UNIT III - Project Formulation

Major steps involved in setting up a small scale UNIT – project identification, formulation

UNIT IV - Innovation & Marketing

Creativity and innovation problem solving, personnel management, marketing and sales management.

UNIT V - legal Issues

Legislation (Licensing, registration, municipal laws, business ethics, income tax, lab law app, consumer compliant redressal)

References:

1. Deshpande, V. (1984) "Entrepreneurship of small scale food industries, concept, growth and management" Deep and Deep Pub, New Delhi.
2. Parek, U. and Rao, T.V.(1978) "Personal efficacy in developing entrepreneurship" Learning systems, New Delhi
3. Rao, T.V and Parekh, L.U (1982) 'Developing Entrepreneurship, A handbook Learning Systems, New Delhi.

Course Outcomes

CO. No.	Upon completion of the course, the students will be able to:	PSOs Addressed	Cognitive level
CO-1	Define the entrepreneurship and needs	1	Understanding
CO-2	Identify the importance of opportunities of entrepreneurship	1, 2	Applying
CO-3	Discuss on the project formulation	2 & 3	Analyzing
CO-4	Describe on innovation and creative of problem solving	2& 3	Evaluating
CO-5	Create the legal issues on entrepreneurship .	3	Creative

Relationship Matrix

Semester	Course Code		Title of the Course			Hours		Credits		
VI	21UEND61C		Entrepreneurship development			60		4		
Course Outcomes (COs)	Programme Learning Outcomes (PLOs)					Programme Specific Outcomes (PSOs)				
	PLO1	PLO2	PLO3	PLO4	PLO5	PSO1	PSO2	PSO3	PSO4	PSO5
CO-1	✓	✓	✓	✓		✓				
CO-2	✓	✓	✓	✓		✓	✓			
CO-3	✓	✓	✓	✓			✓	✓		
CO-4	✓	✓	✓	✓			✓	✓		
CO-5	✓	✓	✓	✓				✓		
	Number of matches (✓) = ...28.... Relationship = Medium									

SEMESTER - VI

Course Title	PROJECT
Total Hrs.	60
Hrs./Week	4+4
Course Code	21UEND62
Course Type	DSE-IV
Credits	6
Marks	100

GUIDELINES:

1. The project may be done individually or in groups not exceeding five per group.
2. The minimum length of the project should be 30 pages in A4 size.
3. Marks for the project report will be 100 divided as 60% for the project and 40% for Viva-Voce Examination.

EVALUATION SCHEME:

The Project will be evaluated by both the Internal and External Examiners. Each Examiner will evaluate for 100 marks. The average mark obtained by the candidate is considered marks for the Project Report. The allocation of marks for Project is as follows:

Scheme of Evaluation:

Project	Internal	External
Word of title / Topic	5	5
Objectives / Formulation including Hypothesis	5	5
Review of Literature	10	10
Methodology / Techniques / Procedures adopted	15	15
Summary / Findings / Summation	10	10
Works Cited / Work Consulted / References / Annexures / Footnotes	10	10
Relevance of project to social needs	5	5
	60	60

SEMESTER – VI

Course Title	NATURAL FOODS
Total Hrs.	30
Hrs./Week	2
Course Code	21USND61
Course Type	SEC - V
Credits	2
Marks	100

General Objective:

This course covers the role of foods in preventing diseases.

Course Objectives:

CO.	The learners will be able to:
CO-1	Understand the clinical role of foods
CO-2	Application of foods as functional ingredient
CO-3	Make use of spices and condiments as natural healers
CO-4	Acquire knowledge on the role of foods in preventing diseases
CO-5	Create the use of natural foods

UNIT-I Anti-oxidant Foods and Cancer fighting foods

Anti-oxidant foods – Foods that prevent oxygen damage, Cancer fighting foods - Foods that control and prevent cancer.

UNIT-II Anti diabetic Foods and Blood pressure lowering foods

Anti diabetic foods – foods that lower Blood sugar, Blood pressure lowering foods – foods that lower the blood pressure.

UNIT-III Immunity stimulating foods and Memory enhancing foods

Immunity stimulating foods – Foods that build up body resistance, Memory enhancing foods – Foods that sharpen memory.

UNIT-IV Cholesterol lower foods and Weight reducing foods

Cholesterol lower foods – foods that lowers the LDL cholesterol, Weight reducing foods – foods that reduce body weight.

UNIT-V Ulcer fighting foods and Anti diarrhoeal foods

Ulcer fighting foods – foods that fight stomach ulcers, Anti diarrhoeal foods – foods that control diarrhoea.

Textbook:

1. Bakhru (2006), Healing through natural foods, Jaico Publishing House.

References:

1. Bakhru (2006), Indian species and condiments as natural healers, Jaico Publication House, www.jaicobook.com
2. Devaraj, T.L, Ayurveda yoga and Nature, Health and longevity through sterling publishers (p)Ltd, Delhi.

Course Outcomes

CO.	Upon completion of the course, the students will be able to:	PSOs Addressed	Cognitive level
CO-1	Understand the importance of natural foods	1,2	Understanding
CO-2	Investigate the interactions between various natural foods	1, 2,3	Applying
CO-3	Illustrate the clinical role of foods in preventing diseases	2 & 3	Analyzing
CO-4	Evaluate the functional ingredients present in various natural foods.	2& 3	Evaluating
CO-5	Design natural foods recipes for treating diseases.	1,2,3,4,5	Creating

Relationship Matrix

Relationship Matrix										
Semester	Course Code		Title of the Course			Hours		Credits		
VI	21USND61		NATURAL FOODS			30		2		
Course Outcomes (COs)	Programme Learning Outcomes (PLOs)					Programme Specific Outcomes (PSOs)				
	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO-1	✓	✓	✓	✓		✓	✓			
CO-2	✓	✓	✓	✓		✓	✓	✓		
CO-3	✓	✓	✓	✓			✓	✓		
CO-4	✓	✓	✓	✓			✓	✓		
CO-5	✓	✓	✓	✓			✓	✓	✓	✓
	Number of matches (✓) = ...28.... Relationship = Medium									

THE SCHEME OF EXAMINATIONS UNDER CHOICE BASED CREDIT SYSTEM

- The medium of instruction in all the UG and PG Programmes is English and Students shall write the CIA Tests and the Semester Examinations in English. Three CIA Tests for one hour each will be conducted. For the calculation of CIA Tests marks the average of the best two tests will be taken. The portion for each test can be 1.5 units of the unitized syllabi.
- Two assignments for the Undergraduate Programmes and one assignment and one seminar for the Postgraduate Programmes are compulsory.
- Two Practical Examinations will be conducted for CIA at the end of the semester and the average will be taken.

Distribution of Marks for the Students admitted into the UG and PG Programmes from the academic year 2021-2022

CIA Tests and Semester Examinations

Undergraduate, Certificate, Diploma and Advanced Diploma Programmes						
Course Type	TOTAL MARKS	CIA TESTS MAX.MARKS	SEMESTER EXAMINATION Max. Marks	PASSING MINIMUM		
				CIA	SEM. EXAM	OVERALL
Theory	100	25	75	Nil	30	40
Practical (2Hrs.)	50	20	30	Nil	12	20
Practical (4Hrs.)	100	40	60	Nil	24	40
Project	100	Nil	Report- 60 Marks Viva-Voce- 40 Marks	Nil	Nil	100

Postgraduate Programmes						
Course Type	TOTAL MARKS	CIA MARKS	SEMESTER EXAM	PASSING MINIMUM		
				CIA	SEM. EXAM	OVERALL
Theory	100	40	60	Nil	30	50
Practical	50	20	30	Nil	15	25
Practical (for PG Maths only)	100	40	60	Nil	30	50
Project Report	150	Nil	Project Report- 90 Marks Viva-Voce Examination - 60 Marks	Nil	Nil	150

CIA TESTS

Distribution of Marks

Components	Tests (A)			Assignment (B)	Seminar (C)	Record Note (D)	Total (A+B+C+D)
	I	II	III				
UG-Theory	20	20	20	5	-	-	25
	The Average of the Best Two Tests:20						
PG-Theory	30	30	30	5	5	-	40
	The Average of the Best Two Tests:30						
UG- Practical (2 hrs)	15	15		-	-	5	20
	The Average of the Tests: 15						
UG- Practical (4 hrs)	30		30	-	-	10	40
	The Average of the Tests: 30						
PG- Practical	15	15		-	-	5	20
	The Average of the Tests: 15						
PG- Practical (Maths only)	30	30		-	-	10	40
	The Average of the Tests: 30						

Question Pattern for CIA Test (Theory)

Programme	Question Paper Pattern			Total (A+B+C)
	Part-A	Part-B	Part-C	
UG	MCQs- 8x0.5=4 marks	Internal Choice (Either or type). 2x4=8 marks Answer should not exceed 250 words	Internal Choice (Either or type) 1x8=8 marks Answer should not exceed 500 words	20
PG	MCQs- 20x0.5=10 marks	Internal Choice (Either or type) 3x4=12 marks Answer should not exceed 250 words	Internal Choice (Either or type) 1x8=8 marks Answer should not exceed 500 words	30

End Semester Examination (ESE)

The students who have put in the required number of days of attendance are eligible to appear for the End Semester Examinations irrespective of whether they have passed in the CIA Tests or not. They have to pay the examination fees for all the current courses and the arrear courses, if any, and submit the application form before the due date specified for the purpose. For any reason, the

dates will not be extended. Hall tickets will be issued only for those who have paid the fees. The question papers for the End Semester Examinations for all the theory courses of the UG and the PG Programmes will be set for 75 marks.

Question Pattern for End Semester Examinations (Theory)

Programme	Question Paper Pattern			Total (A+B+C)
	Part-A	Part-B	Part-C	
UG	MCQs- 30x0.5=15 marks	Internal Choice (Either or type) 5x4=20 marks Answer should not exceed 250 words	Internal Choice (Either or type) 5x8=40 marks Answer should not exceed 500 words	75
PG	MCQs- 30x0.5=15 marks	Internal Choice (Either or type) 5x4=20 marks Answer should not exceed 250 words	Internal Choice (Either or type) 5x8=40 marks Answer should not exceed 500 words	($\frac{x}{75} \times 60$) 60

The Question Paper Pattern for the End Semester Examinations (Practical)

The Question Paper Pattern is designed by the respective departments.