

Teaching Plan

Department of Food and Nutrition

2022-23

NAME OF THE PROGRAMME

B.Sc. (H) Food and Nutrition

PROGRAMME OUTCOME

The course of B.Sc. (H) Food and Nutrition in Choice Based Credit System would be of 3 year duration having 6 semesters, divided into 14 Core papers, 4 Discipline Specific Elective courses, 2 Skill Enhancement Elective Courses and 4 Generic Elective Courses. Each Year would consist of 2 semesters. The programme outcomes are as follows-

- Development of knowledge of various areas related to Food Science and Dietetics
- Understand food composition and its physicochemical nutritional, microbiological and biochemical aspects
- Know about the spoilage, processing and preservation techniques of pulses, oilseeds, spices, fruits and vegetables, meat, fish, poultry, milk & milk products
- Understand the importance of community nutrition, therapeutic nutrition, public health, food safety, food quality, food laws and regulations.
- Know the importance and requirements of nutrition during various stages of life.
- Development of knowledge regarding etiology and management of nutritional disorders from nutritional deficiency.
- Introduction of skill development techniques and training in food and nutrition

Notes:

You can merge cells in between and add students' seminars and class tests / internal assessment.

For incorporating PO / CO at UG level, you may refer to your WBSU CBCS syllabus.

If not there you can refer to the UGC model syllabus

https://www.ugc.ac.in/ugc_notices.aspx?id=MTA3Nw==

			Semester			Ι				
Course Ti	itle	HUMAN	NUTRITI	ON ('	Гheory)					
Course Co	ode	FNTACC	DR01T	Cree	lit		4			
Course O	 Students can develop knowledge regarding various area related to Food Science. Enable the students to understand food composition, nutritional aspects of different food commodities, function of foods, definition of Health and Malnutrition, Know the cooking methods and the process of digestion and absorption of nutrients in human body. 									
	Scheme of Instruction									
Total Dur	ation	60hrs	Class/Wee	ek	4 Hours/week			4hrs		
Instructio	on Mode	Black bo	ard and ch	alk, I	СТ,					
		Sc	cheme of E	xamiı	nation					
Maximun	n Score	50	Internal		10	End	Semester	40		
			Course N	Iappi	ng					
Units		Course	Content			Lecture	e Hour (Cu	mulative)		
1	Introduction to	o Food and	Nutrition		1	0				
2	Foods, Nutrie	nts and coo	king of foo	d	1	0				

3	Food energy and energy requirements	15
4	Digestion of Foods	25

			Semester			Ι				
Course T	itle	HUMAN	NUTRITI	ON (I	Practical)					
Course C	ode	FNTACC	OR01P	Cre	lit		2			
 Students can prepare foods by using different methods of cooking. They can develop the knowledge regarding eye estimatio of raw foods. They can prepare supplementary foods and low cost diet for different age groups and malnourished child respectively. 								stimation		
		S	cheme of I	nstru	ction					
Total Du	ration	60hrs	Class/Wee	k	4	Hours/week 4hrs				
Instructio	on Mode	Demonst	ration, Han	nds-o	n practice	ctice				
		Sc	cheme of Ex	xamii	nation					
Maximun	n Score	25	Internal		15	End	Semester	10		
			Course M	lappi	ng					
Units		Course	Content		L	ecture	e Hour (Cu	mulative)		
1	Process involv steaming, grill		•	vave,	12					
2	General concepts of weights and measures, Eye estimation of raw cooked foods									
3	Preparation of and their signi			-	-					

4	Preparation of	supplemen	ntary food f	rom		16					
	different age g	group and the	heir nutritic	onal							
	significance	-									
5	Planning and	preparation	of low cos	t diet	for	12					
	Grade I and G	rade II mal	nourished o	child.							
			Semester			1	I				
Course T	itle	PHYSIL	OGY IN N	UTR	TION (Theor	·y)				
Course C	ode	FNTACC	DR02T	Cree	dit			4			
Course O	utcome	Students of	can acquire	e knov	vledge re	egardin	ng th	e			
							_				
			sic concept								
		• function related to system physiology including blood and									
		body fluids, cardio vascular system, respiratory system and									
		renal physiology.									
		S	cheme of I	nstru	ction						
Total Du	ration	60hrs	Class/Wee	ek	4	I	Hou	rs/week	4h	ırs	
Instructio	on Mode	Black bo	ard and ch	alk, I	СТ				I		
		Sc	heme of E	xamiı	nation						
Maximur	n Score	50	Internal		10	F	End	Semester		40	
			Course N	lappi	ng						
Units	Course Content					Lect	ture	Hour (Cu	mul	ative)	
1	Unit of Life: (Cell and Tis	ssue Structu	ire		12					
2	Blood and boo	ly fluids				12					
<u>.</u>											

3	Cardiovascul	Cardiovascular system								
4	Respiratory s	ystem				12				
5	Renal Physio	logy, skin a	nd body tem	perati	ire	12				
	1		Semester				Ι			
Course T	Course Title PHYSILOGY IN NUTRITION (Practical)									
Course C	Code	FNTAC	OR02P	Crea	lit			2		
Course C	Course Outcome Students can perform different ex						ent to	measure dif	fere	nt
parameters related to human P					in Phys	iology				
			Scheme of I	Instru	ction					
Total Du	ration	60	Class/Wee	ek	4		Hours/week ²			ırs
Instruction	on Mode	Model, I	Demonstrat	ion, H	ands-o	on pra	ctice		·	
		S	cheme of E	xamii	nation					
Maximu	n Score	25	Internal		15		End	Semester		10
			Course N	lappi	ng		<u> </u>			
Units		Course	Content			Le	I ractical) 2 iment to measure different orgy. Hours/week 4hrs oractice End Semester 10 08			
1	Determination	n of pulse ra	te in Restin	g cono	lition	08				
	and after exer	rcise (30 bea	nts/10 beats	metho	d)					
2	Determination of blood pressure by				08					
Sphygmomanometer (Auscultatory method).										
3	Interpretation	of normal l	ECG curve v	with 6	chest	12				
	leads.									

4	Measurement of Peak Expiratory flow rate.(By	08
	spirometer)	
5	Determination of Bleeding Time (BT) and	08
	Clotting Time (CT).	
6	Detection of Placed group (Slide method)	04
0	Detection of Blood group (Slide method)	04
7.	Measurement of Haemoglobin level (Sahli's or	12
	Drabkin method)	

		Semester			Ι	[
Course Title	FOOD CI	HEMISTR	Y, B	OPHYSICS	5 ANI	BIOCHE	MI	CAL		
	PRINCIP	PRINCIPLES (Theory)								
Course Code	FNTACO	R03T	Cree	lit		4				
Course Outcome	They can acquire the basic concept of physical and chemical properties of different macronutrients (carbohydrate, lipid and protein) and water along with different physicochemical principle and enzyme kinetics.									
	S	cheme of I	nstru	ction						
Total Duration	60	Class/Wee	ek	4	Hou	rs/week	4			
Instruction Mode	Black boa	ord and ch	alk, I	СТ						
	Sc	heme of E	xamiı	nation						
Maximum Score	50	Internal		10	End	Semester		40		
		Course M	Iappi	ng						

Units	Course Content	Lecture Hour (Cumulative)
1	Proteins and Amino acids.	10
2	Carbohydrate Chemistry	12
3	Lipid Chemistry	10
4	Water	6
5	Physicochemical principles	18
6	Enzymes	4

		Semester			I	[
Course Title	FOOD CI	HEMISTR	Y, BI	OPHYSICS	AND	BIOCHEM	110	CAL		
	PRINCIP	PRINCIPLES (Practical)								
Course Code	FNTACO	R03P	03P Credit			2				
Course Outcome	Students c	an perform	diffe	rent qualitativ	e and	quantitative)			
	biochemical test.									
	S	cheme of I	nstru	ction						
Total Duration	60	Class/Wee	ek	4	Hou	rs/week	4			
Instruction Mode	Demonstr	ation, Har	nds-or	n practice	•					
	Sc	heme of E	xamiı	nation						
Maximum Score	25	Internal		15	End	Semester		10		
		Course N	Iappi	ng						

Units	Course Content	Lecture Hour (Cumulative)
1	Qualitative tests for the identification of: Glucose,	12
	Galactose, Fructose, Sucrose, Lactose, Starch, and	
	Dextrin.	
2	Glucose estimation in blood.	04
3	Qualitative tests for the identification of -	12
	Albumin, Gelatin, Peptone, urea, uric acid.	
4	Protein estimation by Biuret and Lowry methods.	08
5	Estimation of urea and uric acid in blood.	08
6	Determination of acid value of oils by titrimetric	04
	method	
7	Determination of osmotic pressure of colloidal	08
	solutions.	
8	Determination of specific gravity of liquid (fruit	04
	juice, blood).	

	Semester	II					
Course Title HUMAN PHYSIOLOGY (Theory)							
Course Code	FNTACOR04T	NTACOR04T Credit 4					
Course Outcome	Students can acquire	knowledge regarding ba	asic concept of system				
	physiology includingexcitable cell, nervous system, reproductive						

		and endoc	rine system.						
Scheme of Instruction									
Total Du	ration	60	Class/Week	4	Hours/week				
Instruction Mode Black board and chalk, ICT						I			
Scheme of Examination									
Maximun	n Score	50	Internal	10 End Semester 40			40		
			Course Mappi	ng					
Units		Course (Content		Lecture Hour (Cumulative)				
1	Physiology of	excitable c	ells		15				
2	2 Nervous System				15				
3	3 Reproductive system						and Semester 40		
4	Endocrine sys	tem			15				

			Semester				II		
Course T	ïtle	HUMAN	PHYSIOI	LOGY	(Practi	cal)			
Course C	Code	FNTAC	OR04P	Cree	lit		2		
Course O	utcome	Students	can identify	diffe	rent tissu	e sectior	ı (mammalia	n) a	nd can
		perform o	qualitative d	leterm	ination c	of glucos	e in blood an	d ui	rine,
		total cour	nt and differ	rential	count. T	They can	also perform	dif	ferent
		visual tes	t.						
		S	Scheme of I	nstru	ction				
Total Du	ration	60hrs	Class/Wee	ek	4	Но	urs/week	4	
Instructio	on Mode	Demonst	ration, His	tologi	cal slide	s, Hands	s-on practice	e	
		S	cheme of E	xamiı	nation				
Maximur	n Score	25	Internal		15	En	d Semester		10
		L	Course N	lappi	ng				
Units		Course	Content			Lectur	e Hour (Cu	mu	lative)
1	Test for Visua	ll acuity, C	olour visior	1.		08			
2	Identification	with reaso	ns of histolo	ogical	slides	28			
	(Lung, Liver, Kidney, Small intestine, Stomach,								
	Thyroid, Adrenal, Pancreas, Testis, Ovary and								
	Muscle of mammals)								
3	Qualitative de	terminatio	n of glucose	e in bl	ood or	12			

uri	ne.							
4 Tot	tal count (7	al count (TC) and Differential count (DC) 12						
			Semester		1]	II	
Course Title	e	NUTRIENTS	5 МЕТАВ	OLIS	SM T	HEOF	RY	
Course Cod	le	FNTACOR0	5T	Cre	dit		04	
Course Out	come	of meta human • They be	 Students are able to understand the different pathwa of metabolism and their nutritional importance in human health. They become aware of the role of nutrients on different pathways of metabolism 					
		Schem	e of Instru	uctio	n			
Total Durat	tion	60 hrs	Class/We	ek	04	Но	urs/week	04
Instruction	Mode	BLACK BOA	ARD & IC	T				•
		Scheme	e of Exami	inatio	n			
Maximum S	Score	50	Internal		10	En	l Semester	· 40
		Cou	irse Mapp	ing				
Units		Course Content Lecture Hour (Cumulative)						
1.	Carbohy	Carbohydrate metabolism				14		
2.	Lipid m	etabolism				12		

3.	Amino acid metabolism	08
4.	Biological oxidation	04
5.	Nucleic acid metabolism	08
6.	Vitamins	10
7.	Mineral metabolism	08

	Seme	ester		II	Ι				
Course Title	NUTRIENT	NUTRIENTS METABOLISM PRACTICAL							
Course Code	FNTACOR	05P C	redit		02				
Course Outcome		er miner	rm the estin						
	Schem	e of Inst	ruction						
Total Duration	60 Cla	ss/Week	04	Ηοι	ırs/week	04			
Instruction Mode	ction Mode Laboratory based demonstration, Hands-on practice								
	Scheme	e of Exa	nination						

Maximu	ım Score	25	Internal	15		End Semester	10
			ing				
Units		Course C	Content			ecture Hour (Cumu	lative)
1.	Estimation o	f vitamin (e in citrus frui	ts	12		
2.	Estimation o drinking wat				12		
3.	Estimation o blood (using		and potassium	in	12		
4.	Estimation o spectrophoto		egetables by		12		
5.	Estimation o spectrophoto		rna in tissues l	ру	12		

	Semester	Ι	Π
Course Title	NUTRITION THROU	GH LIFE SPAN	THEORY
Course Code	FNTACOR06T	Credit	04

 Students can understand the RDA of different nutrients at different age and sex group as well as in different physiological condition Students can understand the nutritional problems as well as the preventive strategies at different age and sex group as well as in different physiological condition 					sex group as well as in tion nutritional problems as gies at different age and	
		-	can prepare men ion based on the		fferent physiological	
		Schei	me of Instructio)n		
Total Dura	tion	60	Class/Week	04	Hours/week 04	
Instruction	Mode	BLACK BOARD & ICT				
		Schen	ne of Examinat	ion		
Maximum	Score	50	Internal	10	End Semester 40	
		Co	ourse Mapping	1		
Units		Course (Content		Lecture Hour (Cumulative)	
1.	Basics o	f meal plannin	ıg		04	
2.	Nutrients in adults and elderly				08	
3.	Nutrition during pregnancy				13	
4.	Nutrition	n during lactat	ion		10	

5.	Nutrition during infancy	15
6.	Nutrition for children and adolescents	10

			Semester			Ι	II		
Course Tit	e	NUTRITIO	NUTRITION THROUGH LIFE SPAN PRACTICAL						
Course Coo	le	FNTACOR	FNTACOR06P Credit 02						
Course Out	tcome	Hands on learning on meal planning and calculation of nutrients based ob RDA for different age and sex groups as well as for different physiological states .							
		Schei	ne of Instr	uctio	n				
Total Dura	tion	60	Class/Wee	ek 04 Hou		irs/week	04		
Instruction	Mode	Black board on practice	and labor	atory	v based	Demo	nstration, H	ands-	
		Schem	ne of Exami	inati	on				
Maximum	Score	25	Internal		15	End	Semester	10	
		Co	ourse Mapp	ing					
Units		Course Content					.ecture Hou Cumulative		
1.	1	Meal planning and preparation of adequate meal for different age groups				0			

with reference to different physiological	
conditions.	

	Semester	II	I				
Course Title	ELEMENTARY DIETE THEORY	TICS AND MENU	PLANNING				
Course Code	FNTACOR07T	Credit	04				
Course	• Students can unders	tand the basics of di	et therapy &				
Outcome	therapeutic nutrition	in detail					
	• They are able to know	ow the different type	s of dietary				
	modifications and	dietary guidelines tl	nroughout the				
	life span						
	• They can develop th	e knowledge on dif	ferent food				
	groups.						
	Scheme of Instruction						

Total Dura	ition	60	Class/Week	Class/Week 04 Hours/week 04				
Instruction	nstruction BLACK BOARD & ICT							
Mode								
		Sche	me of Examinat	ion				
Maximum	Score	50	Internal	10	E	End Semester	40	
		C	Course Mapping					
Units		Course	Content		Lect	ture Hour (Cum	ulative)	
1.	Dieter	tics and dieticia	n		04			
2.	Food	groups			13			
3.	Dieta	ry guidelines			06			
4.	Menu	planning			10			
5.	Basic	ics of diet therapy			15			
6.	Diet f	for health care			05			
7.	Routi	ne hospital diet			07			

	Semester	Ι	П
Course Title	ELEMENTARY DIET PRACTICAL	ETICS AND ME	NU PLANNING
Course Code	FNTACOR07P	Credit	04

Course Out	Course Outcome Hands on learning on preparation of different diets and the								
		indication of	use along with	the nut	ritio	onal analyses.			
Scheme of Instruction									
				T					
Total Dura	tion	60	Class/Week	04		Hours/week	04		
Instruction	Mode	Laboratory	based Demonstr	ation, F	Iano	ds-on practice			
		Schen	ne of Examinati	ion					
Maximum	Score	25	Internal	15	Τ	End Semester	10		
		Co	ourse Mapping	1					
Units		Course (Content			Lecture Hou	r		
						(Cumulative)		
1.	Planning	and preparati	on of normal die	et	15				
2.	Planning	and preparati	on of different f	luid	15				
	diets								
3.	Planning	and preparati	on of different s	oft/	15				
	semi soli	d diets							
4.	Planning	and preparati	on of different		15				
	nutrient	modified diet							

Semester III						I	I			
Course Tit	le	SEC-INSTRUMENTATION								
Course Co	de	FNTSSEC01M	-	Cred	lit		02			
Course Outcome Students can understand the basics of instrumentation their print mechanismand .applications.						nciples,				
		meenamsmand .	applications							
	Scheme of Instruction									
Total Duration30Class/Week			eek	02	Hou	ırs/week	02			
Instruction	Mode	Demonstratio	on , Black	Boar	rd & IC	Γ				
		Scheme	e of Exam	inati	on					
Maximum	Score	25	Interna	1	NIL	End	Semester	25		
		Coι	irse Mapp	oing		<u> </u>				
Units	its Course Content						Lecture Hou Cumulative			
1.	Microscopy				04	1				
2.	Chromat	ography			07	7				

3.	Spectrophotometry	07
4.	Electrophoresis	03
5.	Centrifugation	07
6.	ECG and EEG	01
7.	ELISA	01

	Semester	Ι	V
Course Title	COMMUNITY NUTRITIC	ON THEORY	
Course Code	FNTACOR08T	Credit	04
Course Outcome	 community health. They can understar nutritional status of a They become aware deficiency disorders They know different 	-	ues to assess the estations of different al, regional agencies

				programmes t	o comout				
malnutrition in our community as a whole.									
	Sche	me of Instructior	l						
l	60 hrs	Class/Week	04		Hours/week	04			
ode	BLACK BOAI	RD & ICT							
	Schen	ne of Examinatio	n						
re	50	Internal	10		End Semester	40			
	Co	ourse Mapping	1						
	Course C	Content			Lecture H	our			
					(Cumulati	ive)			
Concept o	of community			06	j				
Nutritiona	al assessment and	d surveillance		06	,				
Assessme	ent methods for h	uman		10)				
Diet surve	ey			12					
				00					
Nutrition	al anthropometry	ý		06					
Agencies	and programmes	3		12					
	de re Concept o Nutrition Assessme Diet survo Clinical s Nutrition	60 hrs de BLACK BOAL Schen re 50 re 50 Course C Course C Concept of community Nutritional assessment and Assessment methods for h Diet survey Clinical signs Nutritional anthropometry	60 hrsClass/WeekdeBLACK BOARD & ICTScheme of Examinatiore50Internalcourse MappingCourse MappingCourse MappingCourse ContentCourse ContentNutritional assessment and surveillanceAssessment methods for humanDiet survey	deBLACK BOARD & ICTScheme of Examinationre50Internal10Course MappingCourse ContentCourse ContentCourse ContentOurse ContentOurse ContentOurse ContentOurse ContentOurse ContentOurse ContentOurse ContentOurse ContentOurse Sessment and surveillanceAssessment methods for humanDiet surveyClinical signsNutritional anthropometry	60 hrsClass/Week 04 deBLACK BOARD & ICTScheme of ExaminationScheme of ExaminationCourse MappingCourse MappingCourse Course MappingCourse Course MappingOfCourse Course MappingCourse Course MappingOfCourse Course MappingOfCourse Course MappingOfOurse Course MappingOfCourse Course MappingOfCourse Course MappingOfCourse Course MappingOfOurse Course MappingOfCourse Course MappingOfOurse Course Course MappingOfNutritional assessment and surveillance 06 Assessment methods for human 10 Diet surveyI2Clinical signsOfNutritional anthropometryOf	60 hrsClass/Week04Hours/weekdeBLACK BOARD & ICTScheme of Examinationre 50 Internal 10 End SemesterCourse MappingCourse ContentLecture H (CumulatiCourse ContentLecture H (CumulatiConcept of community06Nutritional assessment and surveillance06Assessment methods for human10Diet survey12Clinical signs08Nutritional anthropometry06			

Semester	IV

le COMMUNITY NUTRITION PRACTICAL									
ode	FNTAC	OR08P	Crea	lit			02		
utcome	Students	can able to	assess	nutritio	nal st	atus o	f a commur	nity b	y
	using AB	CD method	l						
	Š	Scheme of I	[nstru	ction					
ration	60	Class/Wee	ek	04		Hou	rs/week	04	
on Mode	Laborate	ory based d	emon	stration	and	Hand	ls on practi	ice, f	ïeld
	visit								
	S	cheme of E	xamii	nation					
n Score	25	Internal		15		End	Semester		10
		Course N	Ларрі	ng					
	Course	Content				ecture	e Hour (Cu	mula	ative)
Anthropometrie	c measurer	nent of infa	nt		12				
Comparison wi	th norms a	and interpret	tation	of the	12				
nutritional asse	ssmentdata	a and signif	icance						
Growth charts					08				
Clinical assessment and signs of nutrient					16				
deficiencies									
Estimation of f	ood and nu	utrient intak	e		12				
	ode utcome ation on Mode on Mode on Score Anthropometria Comparison wi nutritional assess Growth charts Clinical assessi deficiencies	odeFNTACEutcomeStudents using AButcomeStudents using ABration60on ModeLaborate visiton ModeState Laborate visiton ModeState Laborate visiton ModeCourseAnthropometric measures nutritional assessmentdata Growth chartsComparison with norms a nutritional assessment and s deficiencies	ode FNTACOR08P utcome Students can able to using ABCD method sign ABCD method scheme of I ation 60 Class/Wee on Mode Laboratory based d visit Scheme of E Scheme of E Scheme of E n Score 25 Internal Course N Course N Course N Course N Course N Anthropometric measurement of infa Comparison with norms and interpret nutritional assessment data and signif Growth charts Clinical assessment and signs of nutr deficiencies	ode FNTACOR08P Creation Students can able to assess using ABCD method Students can able to assess using ABCD method "ation 60 Class/Week on Mode Laboratory based demonvisit Scheme of Examin Scheme of Examin n Score 25 Internal Scores 25 Internal Course Mappi Course Mappi Anthropometric measurement of infant Comparison with norms and interpretation nutritional assessmentdata and significance Growth charts Clinical assessment and signs of nutrient	odeFNTACOR08PCreditutcomeStudents can able to assess nutrition using ABCD methodStudents can able to assess nutrition using ABCD methodScheme of Instructionration60Class/Week04OfClass/Week04OfScheme of Examination visitScheme of Examination visitScheme of Examination visitScheme of Examination visitCourse Course MappingCourse Course MappingCourse Course MappingCourse Course MappingGrowth norms and interpretation of the nutritional assessment and significanceGrowth chartsClinical assessment and signs of nutrient deficiencies	odeFNTACOR08PCreditutcomeStudents can able to assess nutritional st using ABCD methodstudents can able to assess nutritional st using ABCD methoda Score6025Internala Score2525Internal15Internal15Course Course MappingCourse Course MappingAnthropometric measurement of infant12Comparison with norms and interpretation of the nutritional assessmentdata and significanceGrowth charts08Clinical assessment and signs of nutrient deficiencies16	odeFNTACOR08PCreditutcomeStudents can able to assess nutritional status or using ABCD methodStudents can able to assess nutritional status or using ABCD methodcolspan="2">colspan="2"odeColspan="2"colspan="2">colspan="2"	ode FNTACOR08P Credit 02 utcome Students can able to assess nutritional status of a communusing ABCD method students can able to assess nutritional status of a communusing ABCD method Scheme of Instruction 60 Class/Week 04 Hours/week an Mode Laboratory based demonstration and Hands on practivisit using students can able to assess nutritional status of a communusing ABCD method an Mode Laboratory based demonstration and Hands on practivisit 15 End Semester an Score 25 Internal 15 End Semester a Score 25 Internal 15 End Semester Course Course Mapping Course Mapping 12 12 Comparison with norms and interpretation of the nutritional assessment data and significance 16 16 Growth charts 08 16 16	ode FNTACOR08P Credit 02 utcome Students can able to assess nutritional status of a community busing ABCD method using ABCD method issues of a community busing ABCD method ration 60 Class/Week 04 Hours/week 04 on Mode Laboratory based demonstration and Hands on practice, f visit of some of Examination of some of Examination a Score 25 Internal 15 End Semester Course Course Mapping Course Course Mapping Anthropometric measurement of infant 12 Comparison with norms and interpretation of the nutritional assessmentdata and significance 08 Growth charts 08 16

			Semester		IV							
Course Title	EPIDEMI	EPIDEMIOLOGY AND PUBLIC HEALTH THEORY										
Course Code	FNTACO	FNTACOR09T Credit 04										
Course Outcome	• By understanding the concept & principles of public health and epidemiology students gather knowledge about basic parameters of health,											
	 The con and The wat 	ey learn about be ey acquire kr nmunicable and control. ey understand ef er , waste and t	asics in epider nowledge re non commun ffect of differ heir managen	niology and garding the nicable disea ent types of nent techniq		in detail. of different eir prevention						
	• 1 ne	ey know differer Sch	eme of Instru		services							
Total Duration	n	60	04	Hours/week	04							
Instruction M	nstruction Mode BLACK BOARD & ICT											
	Scheme of Examination											

Maximum Score	e	50	Internal	10	End Semester	40					
Course Mapping											
Units		Course C	ontent		Lecture Hour (Cu	mulative)					
1.	Introduct	ion on health		()6						
2.	Data of c	ommunity health	1	()6						
3.	Epidemio	ology			10						
4.	Disease :	prevention and o	control		12						
5.	Public he	ealth		()2						
6.	Immuniz	ation		()7						
7.	Commun	ity health care		()5						
8.	Commun	ity water manage	ement	()6						
9.	Community waste management 02										
10.	Air pollu	tion		()4						

	Semester	Ι	V		
Course Title	EPIDEMIOLOGY AN	D PUBLIC HEA	LTH		
	PRACTICAL				
Course Code	FNTACOR09P	Credit	02		
Course Outcome	• Developing the co	ncept of presentat	ion by using AV		

		aids								
		• Formu	lation of low cos	st nutr	itious	s food produc	ts			
Scheme of Instruction										
Total Dura	tion	60	Class/Week	04	H	lours/week	04			
Instruction	Mode	Demonstrat	ion, charts, post	ters ar	nd mo	odels				
		Schen	ne of Examinati	on						
Maximum	Score	25	Internal	15	E	and Semester	10			
		Co	ourse Mapping	1						
Units		Course (Content			Lecture Hou	r			
						(Cumulative)			
1.	Preparat	ion of 3 audio	visual aids like		25					
	charts, p	osters,models	related to health	and						
	nutrition	education.								
2.	2. Formulation and preparation of low cost									
	and nutr	ition supplementary recipe								
3.	Field vis	it			15					

			Semester			IV	7				
Course Tit	le	DIET THERA	APY FOR L	IFE S	STYI	LE					
		DISORDERS	DISORDERS(THEORY)								
Course Co	de	FNTACOR10	NTACOR10T Credit 04								
Course		Students are be	tudents are being able to gather knowledge regarding differen								
Outcome		life style disord	ders, metabo	olic di	sorde	rs, respir	atory dise	ases as			
		well as degene	rative diseas	ses in	detai	l with spe	ecial empl	nasis on			
		their pathogene	esis and diet	ary m	odifie	cations.					
		Scheme of Instruction									
		Sche	ente of fiistr	ucuo	11						
Total Dura	tion	60	Class/Wee	k 04 Hour			s/week	04			
Instruction	l	BLACK BOARD & ICT									
Mode											
		Sche	me of Exam	inati	on						
Maximum	Score	50	Internal		10	End S	Semester	40			
		С	ourse Map	oing							
Units		Course	Content			Lecture Hour (Cumulative)					
1.	Life s	tyle disorder				04					
2.	Diebe	tes mellitus	es mellitus				08				
3.	Cardi	ovascular diseas	se			08					

4.	Weight management	12
5.	Nutritional management of metabolic disorder	08
6.	Nutrition and respiratory health	06
7.	Nutritional manement in cancer	08
8.	Arthritis and osteoporesis	06

		IV							
Course Title	DIET THERAPY AND LIFESTYLE DISORDER								
	PRACTICA	L							
Course Code	FNTACOR	10P	Cre	edit		04			
Course Outcome	Students can	able to Plar	1 and	l prepare	diet o	chart for di	fferent		
	life style disorders commonly found in society.								
	5		-	,		5			
	Saha	me of Instr	uctio	n					
	Schel		ucuo	/11					
Total Duration	60	Class/Wee	ek	04	Hou	ırs/week	04		
Instruction Mode	Laboratory	based Demo	onstra	ation, Har	nds-or	n practice			
Scheme of Examination									
Maximum Score	25	Internal		15	End	Semester	10		

Course Mapping								
Units	Course Content	Lecture Hour (Cumulative)						
1.	PLANNING AND PREPARATION OF DIET FOR DIFFERENT DISEASE	60						
i.	Obesity and Underweight	12						
ii.	Diabetes mellitus	10						
iii.	Hypertension and Atherosclerosis	16						
iv.	Overweight and Underweight	08						
v.	Gout	08						
vi.	Osteoporosis	06						

	Semester	III					
Course Title SEC: FIELD STUDY IN CLINICAL / COMMUNITY							
	SETTING						
Course Code	FNTSSEC02M	Credit	02				

Course Outc	ome	 Students can able to assess nutritional status of a given population of a community and prepare report based on the findings They can able to prepare visual aids like chart, poster or model on nutrition related disorders 							
		Sche	me of Instructior	1					
Total Durati	on	30	Class/Week	02		Hours/week	02		
Instruction N	Mode	Demonstration	n and Hands on J	practic	e				
		Schen	ne of Examinatio	n					
Maximum Se	core	25	Internal	NIL		End Semester	25		
		Co	ourse Mapping						
Units		Course C	Content			Lecture Hou (Cumulative			
1.	clinical c interventi staff train	THEORY: Introduction to clinical nutrition, clinical conditions requiring dietary intervention, role of dietitian in hospitals/clinics, staff training, RDA –requirements, procedure, functioning.							

2.	PRACTICAL- ONE VISIT /	20
	INTERNSHIP&PREPARATION OF	
	VISUAL AIDS	
	(Visit to an ICDS centre	
	Visit to health centre	
	Visit to NGO	
	Visit to old age home	
	Internship)	

	Semester	V						
Course Title		CLINICAL NUTRITION AND DIET FOR SPECIAL SITUATION IN LIFE (THEORY)						
Course Code	FNTACOR11T	Credit	4					
Course Outcome	diseases. • to gain know different dise • to learn the as	I the importance of nutrin ledge about the various of ases along with associat ssociation of food and m f different diseases.	causative factors of ed dietary principles.					
Scheme of Instruction								

ration 60 Class/Week 4				Hours/week	4				
Instruction Mode BLACK BOARD AND ICT									
Scheme of Examination									
n Score	50	Internal	10		End Semester	40			
		Course Mapp	ing						
	Course	Content		Le	ecture Hour (Cu	mulative)			
Nutritional ma	anagement	of physiological	stress	4					
Dietary modif	ication in t	febrile condition		5					
Nutritional ma	anagement	of gi diseases		14					
Malabsorption	syndrome	2		4					
Diseases of ga	llbladder a	and pancreas		4					
Liver diseases				8					
Nutrition management of renal diseases				8					
Nutritional management in allergy				5					
Neurological o	liseases			3					
	Score Nutritional ma Dietary modif Nutritional ma Malabsorption Diseases of ga Liver diseases Nutrition man Nutritional ma	Score 50 Sco	Score 50 Internal Course Mappi Course Mappi Course Mappi Course Content Nutritional management of physiological Dietary modification in febrile condition Nutritional management of gi diseases Malabsorption syndrome Diseases of gallbladder and pancreas Liver diseases Nutrition management of renal diseases	Score 50 Internal 10 Score 50 Internal 10 Course Mapping Course Content Nutritional magement of physiological stress Dietary modification in febrile condition Nutritional management of gi diseases Malabsorption syndrome Diseases of gallbladder and pancreas Liver diseases Nutrition management of renal diseases Nutritional management in allergy	Scheme of ExaminationScore50Internal10Course MappingCourse MappingInternalCourse ContentLeeNutritional management of physiological stress4Dietary modification in febrile condition5Nutritional management of gi diseases14Malabsorption syndrome4Diseases of gallbladder and pancreas4Liver diseases8Nutrition management of renal diseases8Nutritional management in allergy5	Scheme of ExaminationScore 50 Internal 10 End SemesterCourse MappingCourse Course MappingLecture Hour (Curse Mapping)Nutritional management of physiological stress4Dietary modification in febrile condition5Nutritional management of gi diseases14Malabsorption syndrome4Diseases of gallbladder and pancreas4Liver diseases8Nutrition management of renal diseases8Nutritional management in allergy5			

Semester	V

Course Title	CLINICAL NUTRITION AND DIET FOR SPECIAL SITUATION IN LIFE (PRACTICAL)								
	SHUAI								
Course Code	FNTAC	OR11P	2						
Course Outcome	Students	can able-							
	• to	know the	applica	ation of	dietary p	rinciples to p	orepare		
	รเ	itable ther	apeutic	e diets f	for patient	S.	-		
	• to	learn the o	calcula	tion of	different	macro and			
		icronutrier			e food.				
	S	Scheme of	Instru	ction					
Total Duration	60	Class/We	ek	4	He	ours/week	4		
Instruction Mode	Labora	Laboratory based Demonstration, Hands-on practice							
	S	cheme of I	Exami	nation					
Maximum Score	25	Interna	1	15	Er	d Semester	10		
		Course 1	Mappi	ng	I				
Units		Cou	rse Co	ntent		Lectur	e Hour		
						(Cumulative)			
1.	Plann	ing and pr	eparati	on of d	iets for	60			
	the fo	ollowing di	seases-	-					
i.	Peptic Ulcer 15								
ii.	Viral Hepatitis				15				
iii.	Fever	Fever				10			
iv.	Acute	Acute And Chronic Renal Failure				20			

Semester				V					
Course Title	FOOD MICROBIOLOGY AND IMMUNOLOGY (THEORY)								
Course Code	FNTACO	FNTACOR12T Credit 4							
Course Outcome	 Students can able- to know about different microbes and their growth curves. to understand spoilage microbial food, microbiology of foods and food fermentation. to learn about the entire immune system of our body. 								
		cheme of I	iisti u	cuon					
Total Duration	60	Class/Wee	ek	4	Hou	rs/week	4		
Instruction Mode	BLACK	BOARD A	ND I	СТ					
Scheme of Examination									
Maximum Score	50Internal10End Semester40							40	
Course Mapping									

Units	Course Content	Lecture Hour (Cumulative)
1.	General introduction to microbes(bacteria,	5
	fungus and algae)	
2.	Growth kinetics of bacteria	6
3.	Microbiology of food	8
4.	Microbial food spoilage	10
5.	Food fermentation	10
6.	Immune system	20

Semester		V	
Course Title	FOOD MICROBIOLOGY AND IMMUNOLOGY		
	(PRACTICAL)		
Course Code	FNTACOR12P	Credit	4
Course Outcome	Students can able-		
	• To understand the usage of different equipment like		

 compound microscope, autoclave, incubation chamber etc. To learn about the preparation of growth media, identification of bacteria by gram staining and water analysis by MPN method. Scheme of Instruction								r etc.
Total Du	ration	60	Class/Week	4	Hours/w	eek	4	
Instructio	on Mode	Labora	tory based De	monstration	, Hands-o	n pract	ice	
		Se	cheme of Examin	nation				
Maximur	n Score	25	Internal	15	End Sem	nester		10
			Course Mappi	ng	<u> </u>			
Units		(Course Content			Lecture Hour (Cumulative)		
1.		npound mi	logy: use of equip croscope, use of a 1 chamber		_	04		
2.	Preparation of different types of media (complex, differential and selective)						08	
3.	Preparation of slants, stabs and plates using nutrient agar 0							
4.	Morphological study of bacteria and fungi using permanent 12 slides. 12							
5.	Gram staining					16		

6.	Bacteriological analysis of water by MPN method	12
7.	Ouchterlony double diffusion test in agar-gel	04

Semester						V	7	
Course Tit	tle	SPORTS NUTRITION (THEORY)						
Course Co	de	FNTDSE01T Credit 4						
Course Ou	itcome	Students c	an able-				I	
		• To	understand	l the re	elation betw	ween sp	orts and nut	rition.
		• To :	know abou	it the 1	nutritional	assessm	ent of sport	s persons.
		• To	understand	the in	nportance	of carbo	ohydrates, p	roteins,
				mine	rals and wa	ater for a	any kind of	sports
			vities.					
		S	cheme of I	nstru	ction			
Total Dura	ation	60	Class/Wee	ek	4	Hou	rs/week	4
Instruction	n Mode	BLACK I	BOARD A	ND I	СТ			1
		Sc	heme of E	xamiı	nation			
Maximum	Score	50	Internal		10	End	Semester	40
	Course Mapping							
Units		Course (Content			Lecture	e Hour (Cu	mulative)
1.	Introduction				6	5		
2.	Activities				6	5		

3.	Carbohydrate needs	8
4.	Fat needs	6
5.	Protein needs	6
6.	Micronutrients needs	6
7.	Fluid needs	4
8.	Nutritional guidelines for different sports	8
9.	Management of selected nutritional problems among sportspersons	6
10.	Dietary supplements	4

	Semester	V		
Course Title	SPORTS NUTRITI	ON (PRACTICAL)		
Course Code	FNTADSE01P	Credit	2	
Course Outcome	sports personTo gain know sports person	vledge about the nutrition	nal assessment of	

	Scheme of Instruction								
Total Duration60Class/Week4Hours/week4					4				
Instructio	on Mode	Laborat	tory based De	monstrat	tion	, Hands-on practi	ce		
		Sc	cheme of Examin	nation					
Maximun	n Score	25	Internal	15		End Semester	10		
			Course Mappi	ng					
Units		Course	Content		L	ecture Hour (Cun	nulative)		
1.	Calculation of	energy rec	uirement accord	ing to	20				
	physical activi	ity level of	sports person.						
2.	. Nutritional assessment of athletes. 20								
3.	Review on ergogenic nutritional products and								
	supplements a	vailable in	market.						

	Semester	V
Course Title	FOOD BORNE DISE	EASES AND FOOD TOXICOLOGY

		(THEORY)	(THEORY)						
Course C	ode	FNTADSE	03T	Credit			4		
Course O	Outcome	 By this course students are able to know- different types of Food borne diseases, their mode of action prevention and control importance of food safety and its management toxic constituents in food and their effects on human health different aspects of hygiene and sanitation types of hazards and lactose intolerance in detail 							
				istiuc				-	
Total Du	ration	60 HOURS	Class/Wee	ek	4 Hou		urs/week	4	
Instructio	on Mode	BLACK B	OARD & IO	CT					
		Sc	heme of Ex	amin	ation				
Maximur	n Score	50	Internal		10	En	d Semester	40	
			Course M	appin	g				
Units		Course C	Content			Lectu	re Hour (Cu	mulative)	
1	Food borne dis	eases				15			
2	Lactose intoler	ance				03			
3	Mechanism of	food borne diseases 06							
4	Food safety		10						
5	Hygiene and sa	anitation				09			

6	Food safety management	07
7	Toxic agents in food.	10

		Semester	V						
Course Title	FOOD B	FOOD BORNE DISEASES AND FOOD TOXICOLOGY (PRACTICAL)							
Course Code	FNTADS	SE03P		Crea	lit	2			
Course Outcome	 By this course students are able to do different assessment tests used in assessing the surface sanitation, personal hygiene, physico chemical properties of waste water as well as the testing of sanitizers and disinfectants isolate bacteria from rotten food bread and vegetables map out the design for various food processing systems , cold storage and ware house etc. prepare report based on the field visit to enrich their pravtical experiences 								
		S	cheme of Ir	istruc	tion				
Total Duration		60 HOURS	Class/Wee	ek	4	Hours/week	4		
Instruction Mode	Instruction Mode Laboratory based Demonstration, Hands-on practice						e		
	Scheme of Examination								

Maximum Scor	Iaximum Score25Internal15End S				End Sem	nester	10	
Course Mapping								
Units		Course Content						
1	Assessment of	surface sanita	ation by swab an	d rinse metho	od.	06		
2	Assessment of	personal hyg	iene.			04		
3	Designing of various food processing systems and food service areas.					06		
4	Design and lay	out of cold st	orage and ware l	iouse.		06		
5	Assessment of	physico chen	nical properties of	of waste wate	r	06		
6	Isolation and enumeration of bacteria from rotten food bread and vegetables					08		
7	Testing of sanitizers and disinfectants					06		
8	Study of phenol coefficient of sanitizers.					06		
9	Visit to Food in	ndustry and p	reparation of rep	ort.		12		

	Semester	VI				
Course Title	FOOD PROCESSING AND FOOD TECHNOLOGY(THEORY)					
Course Code	FNTACOR13T	Credit 4				
Course Outcome	By this course studentsstorage, contant	s are able to know- nination and spoilage of	different types of			

foods • different kinds of food preservation techniques along with their impact on nutritional quality • Food Standards and Laws& Food Adulteration in detail • different kinds of food packaging and labeling laws • Scheme of Instruction								
Total Du	ration	60 HOURS	Class/Week	4		Hours/week	4	
Instruction Mode BLACK BOARD & ICT Scheme of Examination								
Maximur	n Score	50	Internal	10 End Sem		End Semester	40	
			Course Mappin	ıg				
Units		Course (Content		Le	ecture Hour (Cu	mulative)	
1	Food Storage	and Spoilag	je		10			
2	Food preserva	ation			12			
3	Preserved Pro	oducts			13			
4	Food Standards and Food Laws			15				
5	Food Adulter	ation			05			
6	Food Packagi	ng			05			

			Semester			V	I		
Course Ti	tle	FOOD TECHNOL			SSING AL)	P	AND		FOOD
Course Co	ode	FNTACOR	13P	Crea	dit		2		
Course Ou Total Dur		 know proce prep prod detec deve Sc 	60 Class/Week 4 Hours/week 4						
Instructio	n Mode	Laborato	ry based	Demo	onstratio	n, Hands	-on practico	e	
		Sch	eme of Ex	amin	ation				
Maximum	n Score	25	Internal		15	End	Semester		10
			Course M	appin	Ig				
Units		Course Co	ontent			Lecture	e Hour (Cu	mul	ative)
1	Study on Bland	ching and Bro	owning Pro	cess		02			

2	Preparation of Fruit preserves(Jam, Jelly).	08
3	Preparation of vegetable preserves.(Pickles)	06
4	Dehydrated Products – tray drying, sun drying etc.	06
5	Tomato Processing.	08
6	Fruit Pulping/Juice/Beverages production.	06
7	Preparation and Standardization of Traditional Indian Fermented Food.	06
8	Visit to Food Processing and Preservation unit.	12
9	Detection of Adulterants in common Food Stuffs like Milk, Oil, Laddu, Turmeric etc.	06

	Semester	VI						
Course Title	RESEARCH METHO (THEORY)	EARCH METHODOLOGY AND BIOSTATISTICS DRY)						
Course Code	FNTACOR14T	Credit	4					
Course Outcome	 and problem id different study different sample both qualitative representation 	urch methodology inclu	in research a analysis in terms of data and graphical					

		Sc	cheme of Instruc	tion				
Total Dur	ation	60	Class/Week	4		Hours/week	4	
		HOURS						
Instructio	n Modo	BIACK BO	DARD & ICT					
mstructio		DLACK DO	JARD & ICT					
		Scl	neme of Examin	ation				
Maximun	Maximum Score 50 Internal 10			10		End Semester		40
		<u> </u>	Course Mappin	g		L	1	
Units		Course C	Content		Le	ecture Hour (Cu	mu	lative)
1	Research Me	thodology			05			
2	Research pro	blem			10			
3	Study design				15			
4	Sampling of data and analysis				15			
5	Preparation o	f report			15			

	Semester	VI
Course Title	RESEARCH METHO	DOLOGY AND BIOSTATISTICS

		(PRACTIC	AL)						
Course C	ode	FNTACOR	.14P	Credit			2	2	
Course O	utcome	By this cou of any give		s are a	ble to de	o the basi	c statistical	analysis	
Scheme of Instruction									
Total Dui	ration	60 HOURS	Class/We	ek	4	Ηοι	ırs/week	4	
Instructio	on Mode	Laborato	ory based	Dem	onstrati	on, Hand	ls-on practi	ice	
Scheme of Examination									
Maximun	n Score	25	Internal		15 End		Semester	10	
			Course M	appin	g	, ,			
Units		Course (Content			Lecture Hour (Cumulative)			
1	Assignment f	or calculatio	n of the fol	lowing	g	60			
	with provided	l data.							
	• Mean					08			
	Media	ın				08			
	• Mode					08			
	Standard Deviation					16			
	• Standa	ard Error Of	Mean and			02			
	• Stude	nts' 'T' Test				18			

	Semester	V	I
Course Title	FOOD & BEVERAGE	E MANAGEMENT (THI	EORY)
Course Code	FNTADSE04T	Credit	4
Course Outcome	 how it will wor of staffs and sat different forms including pricir different food p cooking , stand different types of portion control, establishment 	are able to know- bod service system- how k, recruitments, selection fety in work etc. of food services and the ng, revenue controletc. production process includ ardization of recipes in d of menu planning as well , purchase and storage in hygiene & sanitation in a	n, induction, qualities influencing factors ling methods of letail l as the utility of food service

	Scheme of Instruction									
Total Du	ration	60	Class/Week	4	Hours/week	4				
		HOURS								
Instruction Mode BLACK BOARD & ICT										
Scheme of Examination										
Maximur	n Score	50	Internal	10End Semester40						
			Course Mappin	g						
Units		Course C	Content		Lecture Hour (Cu	imulative)				
1	Introduction to	Food Servio	ce		10					
2	Food Production	on & Menu I	Planning		20					
3	Resources of food service establishments				20					
4	Personnel Man	agement			10					

	Semester	V	Ι				
Course Title	FOOD & BEVERAGE	& BEVERAGE MANAGEMENT (PRACTICAL)					
Course Code	FNTADSE04P	Credit	2				
Course Outcome	By this course students Planning of A Food Se menu, operations and o	ervice system and ident	tifying clientele,				

		Sc	cheme of Instruc	tion				
Total Du	ration	60	Class/Week	4		Hours/week	4	
		HOURS						
Instruction Mode Laboratory based Demonstration, Hands-on pract				Hands-on praction	ce			
		Scl	neme of Examin	ation				
Maximun	n Score	25	Internal	15		End Semester	10	
			Course Mappir	Ig				
Units		Course (Content		Le	ecture Hour (Cur	nulative)	
	Planning the	set up of a	Food Service Sy	stem	60			
	a) Identifying	resources			10			
	b) Developing	g Project pla	n		15			
	c) Determining investments				15			
	d) Project Pro	oposal.			20			

		S	Semester				V	Ι		
Course '	Title	DAIRY 7	FECHNOL	OGY	(THEO	DRY)				
Course	Code	FNTAD	SE05T	Cre	Credit			4		
Course	Outcome	Students	s will be a	ble to)					
		• unders	stand abou	it the	basic p	orope	rties	of milk ar	nd	about
			us compo							
		• know	about diff	erent	t milk p	rodu	cts a	nd their m	ark	cet
		value.								
		Sc	heme of l	[nstr	uction					
Total D	uration	60	Class/W	eek	k 4 H		Ηοι	ırs/week	4	
Instruct	ion Mode	BLACK	K BOARD) AN	D ICT					
		Sch	neme of E	xami	ination					
Maximu	ım Score	50	Interna	l	10		End	l Semester	r	40
			Course N	Ларр	ing					
Units		Course (Content			Le	cture	e Hour (Cu	mu	lative)
1.	Introduction					2				
2.	Physical prop	perties of	milk			8				
3.	Lactose					4				
4.	Milk fat					10				
5.	Protein and enzymes 10									
6.	Market milk	industry				12				
7.	Milk product	S				14				

Semester		VI				
Course Title	DAIRY TECHNOLOGY (PRACTiCAL)					
Course Code	FNTADSE05P	Credit	2			
Course Outcome	 Students will be able to Learn how to estimate milk protein by various methods Prepare flavoured milk and casein and it's calculation Visit a milk industry to know about it's detailed functions. 					

Scheme of Instruction										
Total Duration		60	60 Class/Week 4 He		Ηοι	ırs/week	4			
Instruction Mode Laboratory demonstration, hands of					n practice					
Scheme of Examination										
Maximum Score		25	Internal	10	End	l Semester	15			
Course Mapping										
Units	Course Content					Lecture Hour				
							(Cumulative)			
1.	To perform platform tests in milk.(Acidity,COB,MBRT,specificgravity,SNF).						15			
2.	To estimate 1	08								
3.	To estimate 1	08								
4.	Preparation of milk.	06								
5.	To prepare c	08								
6.	Visit to a mil	15								