

MAHARASHTRA INSTITUTE OF TECHNOLOGY, AURANGABD

An Autonomous Institute Affiliated toDr. Babasaheb Ambedkar Marathwada University, Aurangabad, Maharashtra (India)

Syllabus of Bachelor of Vocation

In.

Food Processing

Under Choice Based Credit System (CBCS)

Under Faculty of Science and Technology

(Effective from 2022-23 and onwards)



Curriculum for B. Voc Food Processing

Sr.	QF Level -5 Course	Course Title	Credit	Contact Hr/Wk		Evaluation Scheme				ESE hour
No.	Code	Course Title	Credit	L	P	MSE	TA	ESE	Total	nour
			Theo	ry						_
1.	VFP101	Food Quality Analysis	3	3	-	10	15	25	50-	1.5
2.	VFP102	Food Refrigeration and Supply		3) = :	10	15	25	50	1.5
3.	VFP103	Food Plant Sanitation	3	3	-	10	15	25	50	1.5
4.	VFP104	Food Plant Equipment	3	3	-	10	15	25	50	. 1.5
			Lab/Pra	ectical						
5.	VFP121	Food Quality Analysis Laboratory	1.5	340	2	*	25	25	50	-
6.	VFP122	Food Refrigeration and Supply Chain Laboratory	1,5	20	2	-	25	25	50	
		On Job Train	ing (OJT)	/Qual	ification	Packs*				_
	VFP131	Assistant Lab Technician FIC/Q7601								
7.	VFP132	Cold storage Technician FIC/Q7004	15	200	7-8 weeks		50	150	200	
	VFP133	Plant Biscuit Production Specialist FIC/Q5003 raining as per guidelines of AICTE & SS							*1	

N5	SQF Level -5		92						Semeste	er -II
Sr.N	Course	Course Title	Credit	Contact Hr/Wk		Evaluation Scheme				ESE
0.	Code	Course Title	Credit	L	P	MSE	TA	ESE	Total	houi
		•	Theo	ry						
1.	VFP151	Entrepreneurship Development	3	3	5 :# 5	10	15	25	50	1.5
2.	VFP152 Bakery, Confectionery and snack products		3	3	2#3	10	15	25	50	1.5
3.	VFP153			3		10	15	25	50	1.5
4.	VFP154	Processing of Meat & poultry Products	3	3	-	10	15	25	50	1.5
		11	Lab/Pra	ectical						
5,	VFP171	Bakery, Confectionery and snack products Laboratory	1.5	-	2	. ≠ 0.	25	25	50	:50
6.	VFP172	Food Packaging Technology Laboratory	1.5	-	2		25	25	50	•
		On Job Train	ing (OJT)	/Qual	fication	Packs*				1
	VFP181	Baking Technician FIC/Q5005								
7.:	VFP182	Packing Machine Worker FIC/Q7002	15	25	7-8 weeks		50	150	200	1.00
	VFP183	Food Products Packaging Technician FIC/Q7001 aining as per guidelines of AICTE & SSC							1,	







Curriculum for B. Voc Food Processing

NSC	F Level -6	la control de la								Sem	ester -I
Sr. No.	Course Code	Course Title	Crèdit	-	ntact r/Wk		Eva	aluation Scheme		¥.	ESE
, 10 ₁	Code	1		L	P	MSE	TW	ESE	PE	Total	hour
			Theo	ry							
1,	VFP201	Food Process Technology-III	3	3	Ę	10	15	25	-	50	1.5
2.	VFP202	Energy conservation and management	3	3	*	10	15	25	. 3	50	1.5
3.	VFP203	Sensory Evaluation of Food	3	3		10	15	25	3	50	1.5
4.	VFP204	Food Plant Layout	3	3	3	10	15	25	-	50	1.5
			Lab/Pra	ctical							
5.	VFP221	Food Processing Technology and Sensory Evaluation – Lab	1.5	2.	2		25	88	25	50	*
6.	VFP222	Food Plant Layout- Lab	1.5	1 84	2		25		25	50	(* :
		On Job Trainin	ng (OJT)/	Qual	ification	Packs*					
	VFP231	Fruits and Vegetable Canning Technician FIC/Q0107	39								
7.	VFP232	Fruit Pulp Processing Technician FIC/Q 0106	15	-	7-8 weeks	***	50	575	150	200	:53
VFP	VFP233	Fruits and Vegetable Drying/Dehydration FIC/Q0105								,	S

Sr.	Course	Course Title	Credit.	Contact Hr/Wk			Eva	luation S	Scheme	ESE hour	
No.	Code			L	P	MSE	TW	ESE	PE	Total	Hour
		.*	Theo	ry							
1,	VFP251	Fish and Poultry Processing	3	3	=	10	15	25	= .	50	1.5
2.	VFP252	By Product Utilization	3	3	=	10	15	25	_=	50	1.5
3.	VFP253	Marketing Management and Trade	3	3	i ll	10	15	25		50	1.5
4.	VFP254	Instrumentation and Process Control	3	3	-	10	15	25	-,	50	1.5
			Lab/Pra	ctical						†i)	
5.	VFP271	Fish and Poultry Processing -Lab	1:5	<u></u>	2	Ne.	25	т.	25	50	
6.	VFP272	By product Utilization-Lab	1.5		2	=	25	1,5/	25	50	
		On Job Trainin	g (OJT)	'Qua	lificatio	n Pack	s*				
7.	VFP281	Fish and Sea Food Processing Technician FIC/Q4001	15		7-8		50		150	200	=
/ ts	VFP282	Purchase Assistant Food and Agriculture FIC/Q7005	13		weeks		50	ii			

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Curriculum for B. Voc Food Processing

NSQ	QF Level -7				4		100		Sem	ester -I
Sr.	Course	Course Title	Credit *	Contact Hr/Wk		Evaluation Scheme				ESE
No.	Code			L	P	MSE	TA	ESE	Total	hour
			Theo	ry		*				
1	VFP301	Ice cream and Frozen Desserts	3 .	3	*	10	15	25	50	1.5
2.	VFP302	Traditional Indian Dairy Products	3	3	-	10	15	25	50	1.5
3.	VFP303	Food Quality, Safety and Certification	3	3	*	10	15	25	50	1.5
4.	VFP304	Financial Management and Cost Accounting	3	3	*	10	15	25	50	1.5
		•61	Lab/Pra	ctical					4	
5.	VFP321	Ice cream and Frozen Desserts -Lab	1.5	•	2	n. =	25	25	50	
6.	VFP322	Traditional Indian Dairy Products- Lab	1.5	•	2	2	25	25	50	14
		On Job Traini	ng (OJT)	Qual	ification	Packs*		60		
	VFP331	Ice Cream Technician FIC/Q2004					-			
7.	VFP332	Traditional Snack and savoury Maker FIC/Q8501	15		7-8 weeks	- 10	50	150	200	-
	VFP333	Butter and Ghee Processing Operator FIC Q/2003			,,, John	8		-7 -		WO =

NSQ	F Level -7								Seme	ster -Il
Sr.	Course	Course Title	Credit	Contact Hr/Wk			Evaluat	Evaluation Scheme		
No.	Code			L	P	MSE	TA	ESE	Total	hour
2			Theo	ry						
18	VFP351	Project Preparation and Management	3	3		10	15	25	50	1.5
2.	VFP352	Entrepreneurship Development	3	3	(8	10	15	25	5.0	1.5
			Lab/Pra	ctical						4
3.	VFP371	Project	9	[·	4	-	100	100	200	
		On Job Train	ing (OJT)	/Qual	ification	Packs*	78			
	VFP381	Production Manager FIC Q/9003								
4.	VFP382	Processed Food Entrepreneur FIC/Q9001	15	-	7-8 weeks		50	150	200	234
	VFP383	Multi Skill Technician FIC/Q9007							200	

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	N	Iaharashtra Instit		-	bad.	
			Autonomous Instituction (Food Process:			
NSOF	Level-6		ood Process Tec		Seme	ster-I
		Scheme	ood Trocess Tee		tion Scheme	47
Lectures		03 hrs/Week		MSE	10 Marks	
Practical		·=		TA	15 Marks	
Total Cre		03		ESE	25 Marks	
				Duration of ESE	1.5 hours	19
Course (Students		nes (CO)	888			
1.		int students with types	and grades of me	eat, poultry, and s	ea foods	
2.	Demo	nstrate understanding	of processing tech	iniques utilized in	the bakery a	and
		ctionery industry	1 0			
Unit			Course Content		4	Hours
Unit 1		y and Snack technolo				(06)
	and c	cakes, Technology o	f manufacturing	process of Pa	sta foods-	
	Macar	oni, Noodles and S	paghetti, Techno	ology of breakfa	st cereals:	
		akes, puffed, extruded				
Unit 2	Meat,	fish and egg technolo	ogy: Developmen	it of meat, poultr	y, egg and	(06)
	fish in	ndustry in India, Pre	-slaughter care,	handling and an	ite mortem	
		ction of animal, Stunn	_			
	inspec		8	. ,		
Unit 3	-	mortis and conversion	of muscle to mea	at Slaughterhouse	sanitation.	(06)
Omes	_	nygiene and zoomotic				
Unit 4		and egg products – q				(06)
Unit 4		ortation and marketing			, manding,	(00)
TT 1/ M					leaning and	(06)
Unit 5	1	facturing process of de			icalling and	(00)
	sanıta	tion, Waste manageme	ent of food proces	sing piants.		
O. N.	D 1		Author	Publisher		
Sr. No.	Book	ture as a series as a series a?	Author Casey M.		CRS PRESS	
1		try meat processing"	Owens. (201		AS I KLOS	
2.	Snack	s food	Gordon			
		12	B.R.1997			
3.	Handl	oook of meat processin			Wiley & Sc	ns
			(2010),	Į . Į	Publication.	



			G. S. Mandal's				
	Ma	harashtra	Institute of Techn (An Autonomous Ins B. Voc. (Food Proce	titute)	oad.		
NSQF I	evel-6	VFP202:	Energy conservation		Semes	ter-I	
	aching So			Examinat	ion Scheme		
Lectures		3 hrs/Week		MSE	10 Marks		
Practical	- I.			TA	.15 Marks		
Total Cre	dits 0)3		ESE	25 Marks		
			30	Duration of ESE	1.5 hours		
Course C Students	will be ab	ole to					
15	Acquain	it students wit	th types and understan	d energy conservation	on		
2.	Describe	e the manager	ment techniques utilize	ed in the energy cons	servation.	YY	
Unit			Course Conte			Hours	
Unit 1	Introduc	ction: Potentia	al and opportunities of	industrial energy co	nservation	(06)	
	in dairy and food processing. Energy conservation Act 2001 and its important features, Schemes of Bureau of Energy Efficiency (BEE). Electricity Act 2003, Integrated energy policy. Energy management &						
×	audit: D approac perform efficience	efinition, ene h-understandi ance, matchin cies, optimizin	ergy audit, need, types ing energy costs, ng energy use to rec ng the input energy re	s of energy audit. En bench marking quirement, maximiz quirements.	nergy audit g, energy ing system		
Unit 2	Energy	balances and	computation of effic	ciencies of equipme	nt. Role of	(06)	
	Energy manage systems power, transfor	inspectors and ment: Deman , Energy saving Power factor mers	nd Auditors in energy and management, energy and controllers and cost or and its improven	y management. Electrical years with the series of the seri	etrical load information . Quality of losses in		
Unit 3	Energy Energy Drives Efficien appliand Heaters	savings in tra efficient mot (VFD) and th acy (BEE): Pe ces: Induction . Energy effic	ansformers. Electric nators. Variable Speed Interpretation of the saving electric materials and the saving guide with Motors, Air conditionals and conservation techniques of the saving and conservat	Drives and Variable ctric energy. Bureau ith "Star Ratings" coners, Refrigerators ion in utilities: High	Frequency of Energy of electrical and Water of efficiency	(06)	
Unit 4	Energy layouts, conserv	conservation protective vation opportu	mbustion techniques for in steam distributed to the cover insulation cover inities. Upkeep and metals and metals in the cover in the co	tion systems, effic rings in utility pi naintenance of steam	ient piping pes. Steam auxiliaries	(06)	
	and fit	tings. Energy (2), Cooling to	y conservation in R owers, Pumps and pu Maintenance and up	Refrigeration and Amping systems, Fan	C systems is, Blowers,	2	

			tunities in				
	Compressed air pipe lines. Er	lergy conservation oppor	tuilities in				
	Wastewater treatment. Energy co	nservation in buildings: C	Concepts of				
	"Green Buildings"		ti is a				
Unit 5	Waste-heat recovery and therma	l energy storage in food	processing (06)				
Til.	facilities. Condensate recovery and	d reuse. Application of rec	cuparator to				
	recover energy from flue gases fr	rom boiler. DG exhaust, h	ot air from				
	spray dryer, FBD etc. Diesel generating sets (stand by AC Gen sets):						
	spray dryer, 1 Bb etc. Breser generating						
	Energy saving opportunities in DG sets, Fuel and Oil conservation;						
	important regular maintenance aspects. Carbon credits and carbon trade:						
	Concepts of CDM, economic and societal benefits. Cleaner energy						
	Collectis of Chief, coolomic and section Color thermal and						
	sources: Introduction to Solar, and Bio-mass Energy; Solar thermal and						
	photo-voltaic energy options for food processing industries						
	d.	i a	In this				
Sr. No.	Book	Author	Publisher				
1	Energy Conservation in Buildings	O.P.Jahkar,khanna	Publishing House				



	N	Jaharashtra I	G.S.M nstitute of	^{andal's} Fechnology, Auranga	bad.	18	
	14.		(An Autonom	ous Institute)			
NSQF I	[ovol 6		B. VOC. (FOOL	l Processing) Evaluation of Food	Semes	ster-I	
		Scheme	· · ·	Examina	tion Scheme		
Lectures	Jacinng	03 hrs/Week		MSE	10 Marks		
Practical		- US 4113/ W COR		TA	15 Marks		
Total Cre	dits	03		ESE	25 Marks		
Total Cic	dits			Duration of ESE	1.5hours		
Course C	Outcom	ies (CO)		*			
Students							
1.	Under	rstand process of	sensory evalu	ation			
2.	Demo	nstrate understan	ding of food	and its sensory evaluation	techniques.		
Unit	Course Content Ho						
Unit 1 Introduction, definition and importance of sensory					in relation:	(06)	
	to consumer acceptability and economic aspects; factors affecting food						
	accep	tance. Terminolo	gy related to	sensory evaluation. Princip	oles of good		
	practi	ce the sensory te	esting environ	ment, test protocol conside	erations.		
Unit 2 Basic principles: Senses and sensory perception, Physiology of sensory						(06)	
Unit 2	Dasic	c Classification	of tastes	and odors threshold va	lue factors		
	organs, Classification of tastes and odors, threshold value factors affecting senses, visual, auditory, tactile and other responses						
	arrect	ing senses, visua	n, additiony, ta	res of tests difference	ests (Paired	(05)	
Unit 3	Discrimination Tests, Procedure: Types of tests – difference tests (Paired comparison, due-trio, triangle) ranking, scoring, Hedonic scale and						
	1		triangle) ra	inking, scoring, riedonic	scale and		
	descr	iptive tests.				(07)	
Unit 4	Panel	selection, scre	ening and to	raining of judges; Requ	irements of	(07)	
	senso	ory evaluation, s	ampling pro	cedures; Factors influence	ing sensory		
	meas	urements; Cons	umer Resear	ch - Affective Tests:	Objectives.		
	Meth	ods, types or	questionnair	es, development of qu	estionnaires,		
	comt	parison of laborate	ory testing an	d Consumers studies, limi	tations.		
Unit 5	Intern	relationship betw	een sensory p	roperties of food products	and various	(06)	
Chit	instru	imental and phys	ico-chemical	tests; Quality Evaluations	Application		
	of se	encory testing: s	ensory evalu	ation in food product of	levelopment,		
		ory evaluation in					
	Selis	ny Evaluation in	quality contro	744			
Sr. No.	Book	ζ		Author	Publisher	N.	
1	Sens		of food:	Harry T. Lawless and			
7 7		ciple & practices					
	Princ	-F F		Hildegarde Heymann			



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	Manarashtra Institute of	nous Institute)	oau.			
		d Processing)				
NSQF I		od Plant Layout	Seme	ster-I		
	eaching Scheme	Exam	ination Scheme			
Lectures	03 hrs/Week	MSE	10 Marks			
Practical	- OS INDI WOOL	TA	15 Marks			
Fotal Cre	dits 03	ESE	25 Marks			
rotar ere	uno os	Duration of E	SE 1.5 hours			
Course (Outcomes (CO)					
	will be able to	w/				
1.	They understand plant design and m	nodification		12		
2.	Design the food plant layout as per					
Unit	Course	e Content		Hours		
Unit 1						
	capacity, Requirements of plant b	ouilding and its compo	onents, Project			
	design, flow diagrams, selection	of equipment, process	and controls,			
	Objectives and principles of food pl	lant lavout				
Unit 2	Salient features of processing plants for cereals, pulses, oilseeds,					
horticultural and vegetable crops, poultry, fish and meat products, milk						
		poundy, fish and meat	products, mink			
	and milk products		7 1 D 1	(07)		
Unit 3	Introduction to Finance, Food	Product Marketing,	ood Business	(07)		
	Analysis and Strategic Planning, C	Sovernment schemes ar	d incentive for			
	promotion of entrepreneurship, Go	vt. policy on small and	l medium scale			
	food processing enterprise					
Unit 4	export and import policies relevan	t to food processing se	ctor, procedure	(05)		
	of obtaining license and registrat	ion under FSSAI, Co	st analysis and			
	preparation of feasibility report					
Unit 5	Practical layouts Common mater	rials of construction	of Food plant.	(07)		
Unit 5	building. Maintenance of Food	Dlant Ruilding Ill	umination and	8 6		
	building. Maintenance of Food	a nainting and color	coding Fly and	. J.		
14	ventilation, Cleaning and sanitizati	on, painting and color	counig, 1 ly and	(
11	insect control.					
			D III I			
Sr. No.	Book	Author	Publisher			
1	Plant Layout and Facility	Jack Greene				
	Planning					
2	Process Plant Layout and Piping	Ed Bausbacher and				
	Design	Roger W. Hunt				
		O S S S				



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			B.Voc. (Food Pr					
NSQF I	Level-6			chnology and Sen	sory	Semester-I		
		Evaluation	– Lab			0.1		
		Scheme				Scheme		
Practical 2 Hours/week			TA		5 Marks			
Credits		1.5	- NA	ESE/PE	2:	5 Marks		
Sr.No. List of Experiments								
1		Manufacture of toffees and caramels, fruit preserve.						
2			efficacy of blanch					
3	Prep	aration of fruit	based drinks and	beverages: Ready	-to-serv	e drink, Nectar,		
	Squas	sh, Whey-fruit b	ased beverages					
4	Manu	facture of fruit j	am					
5	Man	ufacture of fruit	jelly	9				
6	Manı	ifacture of choco	late confections.			11		
7	Manı	Manufacture of tomato ketchup/tomato sauce.						
8		ifacture of soups						
9	Manı	ifacture of fruit l	oar Manufacture o	f pickles.				
10	Manu	ifacture of candi	ed fruits					



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	B.Voc. ((Food Processing)					
NSQF I	Level-6 VFP222:Fo	ood Plant layout– Lab	Semester-I				
Te	aching Scheme	Exami	nation Scheme				
Practical	2 Hours/week	TA	25 Marks				
Credits	1.5	ESE/PE	25 Marks				
Sr.No.	.No. List of Experiments						
1	Preparation of project report,						
- 2	Salient features and layout of pre-processing house						
3	Salient features and layout of Milk and Milk product plants						
4	Evaluation of given layout						
5	design and layout of modern ric	ce mill					
6	design and layout of Bakery and related product plant						
7	Study of different types of records relating to production of a food plant						
8	Study of different types of reco	ords relating to finance of a fo	ood plant				
9	Study of different types of reco	ords relating to marketing of a	a food business.				
10	Brain storming and SWOT ana	llysis to start a food processing	ig business.				

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B.Voc. (Food Processing)

NSQF Le	vel -6 On Jo	ob Training/Qualif	Training/Qualification Packs*				
Teac	hing Scheme		Exam	nination Scheme			
Practical	7-8 week		TA	50 Marks			
Credits	15		ESE/PE	150 Marks			
			77.70.10.10.7				
VFP231	Fruits and Vegetab						
VFP232		sing Technician FIC/Q 0106					
VFP233	Fruits and Vegetab	le Drying/Dehydra	tion FIC/Q0105				

^{*}Any one On-Job-Training as per guidelines of AICTE & SSC for the given skill sets for 150 Marks External Assessment by NSDC/SSC



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		G. S. Mandal's			7.1			
	Maharashtra l	Institute of Technology, Aur	angabad.					
	Manarashtia 1	An Autonomous Institute)						
		(Food Processing Technolog	gy)	2.0	IC .			
NSQF I		1: Fish and Poultry Process	sing	Semes	ter-II			
	eaching Scheme		Examinat	ion Scheme				
Lectures	03 hrs/Week	MSE						
Practical	-	TA	TA 15 Marks					
Total Cree	dits 03	ESE						
		Duration	Duration of ESE 1.5 hours					
Course C	Outcomes (CO)			34 ==				
Students	will be able to			1.5				
1.	Understand process of f	ish processing technique						
2.	Apply poultry and fish p	processing techniques.			YY			
Unit		Course Content		T 1' D	Hours			
Unit 1	Sources and importance	of poultry; Status of poultry	industry ir	i India; Pre	(06)			
	slaughter operations and	slaughtering operations for pot	ultry; Eggs	s: Structure,	40			
	composition, quality c	haracteristics, processing, pr	reservation	of eggs;				
	Processing and preserv	ation of poultry meat and	chicken p	eatties; By-				
	products of poultry and e	ggs and their utilization.			(06)			
Unit 2	Fisheries resources, global and Indian scenario; Types of fish and other							
Omica	marine products: Classif	ication of fish (fresh water and	marine),	composition				
	of fish characteristics	of fresh fish, spoilage of t	fish- micr	obiological,				
	physiological biochemic	cal; Relationship between chilli	ing and sto	rage life				
Unit 3	MAP general aspects of	f fish freezing, changes in qual	lity during	chilled and	(06)			
Unit 3	frozen storage Principl	es of canning, effect of hea	t processi	ng on fish,				
	storage of conned fish	n, preprocess operations, pos	st-process	operations,				
	cannery operations for sp	pecific canned products	T. Francisco					
	cannery operations for s	tion fish muscle proteins suri	mi process	traditional	(06)			
Unit 4	;Fish products: introduc	;Fish products: Introduction, fish muscle proteins, surimi process, traditional and modern surimi production lines, quality of surimi products, comparison						
	and modern surimi prod	uction lines, quality of surffin	producis,	(FPC) fish				
	of surimi and fish min	ce products; Fish protein cor	Duanarati	on protocols				
		ish protein hydrolysates (FPH)	;;Preparau	on protocois				
	of indigenous products:	Fish sauce and paste.		1 2640	(06)			
Unit 5	Novel methods; Low	doseir radiation; High press	ure treatr	nent, MAP,	(06)			
	vacuum packaging, gas	packaging; Oxygen absorbent	s and CO2	2 generators,				
	ethanol vapour generation	on, hurdle barrier concept, valu	ie added f	ish products,				
	packaging.	30						
Sr. No.	Book	Author		blisher				
1	Meat, poultry and fish	NPCS Board of Consul		r project co	nsultancy			
	processing	Engineers		vices .				
	Poultry, Egg And Fish	Asim kumar biswas, pra	abhat Ki	ndle edition				
	Processing tech	kumar mandal						

			G. S. M	landal's			
N		Maharasht		Technology, A	urangabad.		
			,	nous Institute)			
				d Processing)			
NSQF			VFP252: By P	roduct Utilizat	on	Semes	ter-II
	eaching	Scheme		MCE	Examinati	on Scheme	
Lectures		03 hrs/Week	_	MSE TA	-	15 Marks	
Practical	1:4-	03		ESE		25 Marks	-
Total Cre	aits	03	-		on of ESE	1.5 hours	
Course (Dutcom	es (CO)		Durac	OII OI LOL	1.0 110015	
Students				10000			
1.			of utilization of	by product			9
2.			es used to utiliz				
Unit		•		Content			Hours
Unit 1	Types	and formation	n of by-produc	ts; Magnitude	of waste ger	neration in	(06)
	differe	ent food proce	essing industric	es; Uses of diff	ferent agricu	ıltural by-	18
	produc	ets from rice r	nill, sugarcane	industry, oil mi	ll etc., Conc	ept, scope	
				nagement and			
	Temperature, pH, Oxygen demands (BOD, COD), fat, oil and grease content, metal content, forms of phosphorous and sulphur in waste waters, microbiology of waste						
Unit 2	other ingredients like insecticide, pesticides and fungicides residues,						
0 1110 2				istries, furnace			-
				ets, briquetting			ķ
	produc	ction of charc	oal briquette.	generation of el	ectricity usi	ng surplus	
			as generation a		•		
Unit 3	Waste	treatment a	nd disposal	design, constru	iction, oper	ration and	(06)
Unit	manac	rement of ins	titutional comm	nunity and fam	ilv size bio	gas plants.	
	nianag	ot of vermin-	composting P	retreatment of	waste: sedi	imentation.	
	1	-	ation and floata				
TT24 4	Coagu	dom, treetmen	ate: Biological	and chemical	oxvoen d	emand for	(06)
Unit 4	Boooman's deadness.						(**)
	different food plant waste- trickling filters, oxidation ditches, activated sludge process, rotating biological contractors, lagoons, Tertiary						
				er treatment p			
				ет пеаштет р	i occss-saiiu,	Coar and	100
		ted carbon filt		d h.o.v ot-1-	removal A	cceccment	(06)
Unit 5	phosp	norous, sulph	ur, nitrogen an	d heavy metals	removal, A	n Effluent	(00)
	treatm	ent and dispo	osal of solid W	vaste; and biog	as generano	to complet	
				erformance of fo	ood maustry	to compry	
	with I	SO-14001 star	ndards				
				1 4 49	D., L17-1.		
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	men (Julization					



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		Maharashtra	(An Autonom			urangabau.		
			An Autonon B. Voc. (Food					
MOORI	1.0					nd Trade	Semes	ter-II
NSQF			Marketing 1	wanagen	ient a	Evaminat	ion Scheme	ter-II
	eaching	Scheme			MSE	Examinat	10 Marks	
Lectures		03 hrs/Week			TA		15 Marks	
Practical	41.	-			ESE		25 Marks	
Total Credits 03					on of ESE	1.5 hours	-	
K)					Durati	on of ESE	1.5 Hours	
Course C								
Students								
1,	Unde	rstand process of	sensory evalu	uation		7		_
2.	Apply	food and its sens	sory evaluation	on technic	ues.			Hours
Unit				Content		anaorta of	marketing	(06)
Unit 1	Conce	ept of marketing	; Functions	of marke	ung;	concepts of	markening	(00)
	mana	gement; scope of	marketing	managem	ent; n	narketing m	anagement.	
	Proce	ss; concepts of m	arketing- mix	x, elemen	ts of n	narketing- n	iix. Market	
	Structure and Consumer Buying Behavior: Concept of market structure,							
	marketing environment, micro and macro environments. Consumers buying							
	behavior, consumerism.							_:(+)
Unit 2	Marketing Opportunities Analysis: Marketing research and marketing						(06)	
0 1111 -	information systems; Market measurement- present and future demand;							
	Mark	et forecasting;,	market segn	nentation.	targe	eting and	positioning.	
	Alloc	ation and market	ing resources	Marketi	ng Pla	nning Proce	ss. Product	
× ,		y and planning: Pr						
77 1/ 0		product developm						(06)
Unit 3	New	product developili	ent process. r	ns Retail	ino wi	oolesaling ar	rd	(00)
	decisions. Marketing channel decisions. Retailing, wholesaling and distribution. Pricing Decisions. Price determination and pricing policy of							
	milk	products in organi	zed and unorg	ganized se	ctors o	f dairy indus	stry	
Unit 4	Drom	otion-mix decision	ns Advertisi	ing: How	adver	tising work	s; Deciding	(06)
Omt 4	Promotion-mix decisions. Advertising; How advertising works; Deciding advertising objectives, advertising budget and advertising message; Media						8	
	Planning; Personal Selling, Publicity; Sales Promotion. Food and Dairy							
					1 10111	ottom. 1 oou	and Dany	
	Produ	acts Marketing. M	arketing and	Traue	<u>.</u>	Direct orres	rta indirect	(06)
Unit 5	Composition & direction of Indian exports; Exports- Direct exports, indirect						(00)	
	exports, Licensing, Joint Ventures, Direct investment & internationalization process, Deciding marketing Programme; Product, Promotion, Price,						2.	
	proce	ess, Deciding m	arketing Pro	gramme;	Prod	uct, Promo	tion, Price,	
	Distr	ibution Channels.	Deciding the	Market O	rganiza	ation		
Sr. No.	Book			Author		Publisher		
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		Maharashtra			v. Aurans	abad.	. ×	
			(An Autonoi			Subudi		
			B. Voc. (Foo		•		2	. 2
NSQF I	Level-6		Instrument			ntrol	Semes	ter-II
		Scheme					n Scheme	
Lectures		03 hrs/Week		N	ISE		10 Marks	
Practical		-		y T	Α		15 Marks	
Total Cre	dits	03		E	SE .		25 Marks	
				Г	uration of	ESE .	1.5 hours	
Course C	utcom	es (CO)						
Students				*				
1,00		ınderstand handl						
2.	The stu	udent will gain a			ent use an	d its pro	cess	
Unit				se Content				Hours
Unit 1		iction, definition						(06)
		teristics; Tempe						
		meters; thermo						
	Pressure and pressure scales, manometers, pressure elements differential							
		e; Liquid level						
	measurement; Flow measurement: Kinds of flow, rate of flow, total flow							
P 1	differe	ntiał pressure me	ters, variable	area meters				
Unit 2	Weigh	t measurement:	Mechanical	scale, elect	ronic tank	scale,	conveyor	(06)
	scale;	Measurement of	moisture co	ontent, speci	fic gravity	, measu	rement of	
		ity, measuremer						
. ^	density	, brix, pH, e	nzyme sens	ors, autom	atic valve	s; Tran	asmission:	
	Pneum	atic and electric	al; Control e	elements, con	ntrol action	ns, pneu	matic and	
		cal control system		109			10.15	
Unit 3		s control: Defin		system and	alysis, dyn	amic be	ehavior of	(06)
Omico		process, Lapla						
		se analysis, free						
	_	st plots and stabil	-				0	- 75
Unit 4				nerating trai	isducers v	ariable	parameter	(06)
OHIL 4	Transducers: Classification, self-generating transducers, variable parameter type, digital, actuating and controlling devices; Controllers and indicators:							
		rature control,						
	_			muoners, mo	vv Tallo CC	,,,,, a	anospiioie	
** ** **		l, timers and indi		aunta contra	llorg adam	tive and	intelligent	(06)
Unit 5	100d so	orting and gradin	g control, dis	screte contro	ners, adap	ortana	hardware	(00)
		llers; Computer-						
		es of data acqu		control co	imputer, s	ugnai ii	nerraemg,	
	examp	les in food proce	essing					
C. N.	Dools			Author	Dub	lisher		
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G. S. Mandal's Maharashtra Institute of Technology, Aurangabad. (An Autonomous Institute) **B.Voc.** (Food Processing) Semester-II VFP271: Fish and Poultry Processing Lab **NSQF** Level-6 **Examination Scheme** Teaching Scheme 25 Marks 2 Hours/week TA Practical ESE/PE 25 Marks Credits 1.5 List of Experiments Sr.No. Pre-slaughter operations of poultry birds 1 Evaluation of quality and grading of eggs 2 3 Preservation of shell eggs Preparation of value added poultry meat products 4 Study of anatomy and dressing of fish 5 Identification of different types of fish - Selection and grading 6 Quality evaluation of fish 7 Preparation of sun dried and salt cured fish, fish sauce 8 Preparation of marine fish oils and various fish products 9 10 Visit to fish processing industry

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B.Voc. (Food I	Processing)
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evel-6	VFP27	72: By Product Utilization Lab Semester-I				
Teaching Scheme			Examination Scheme			
	2 Hours/week		TA	25 Marks		
	1.5		ESE/PE	25 Marks		
		List of Exp	periments			
Determination of temperature, pH						
Determination of turbidity solids content						
Determination of BOD and COD of waste water						
Detei	rmination of ash o	content of agricul	ltural wastes ar	nd determination of un-		
burn	t carbon in ash.	110				
Study	y about briquettin	g of agricultural	residues.			
Estimation of excess air for better combustion of briquettes.						
Study of extraction of oil from rice bran.						
Visit	to various industri	es using waste and	d food by-produ	cts		
	Deter Deter Deter Deter burn Study Esting Study Reco	Determination of temp Determination of turbi Determination of BOD Determination of ash of burnt carbon in ash. Study about briquettin Estimation of excess ai Study of extraction of of Study on bioconversion	Determination of temperature, pH Determination of turbidity solids content of agricultural Estimation of excess air for better comb. Study on bioconversion of agricultural Recovery of germ and germ oil from by	Aching Scheme 2 Hours/week 1.5 List of Experiments Determination of temperature, pH Determination of boD and COD of waste water Determination of ash content of agricultural wastes and burnt carbon in ash. Study about briquetting of agricultural residues. Estimation of excess air for better combustion of briquence of the standard process and the standard process are standard process.		

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Maharashtra Institute of Technology, Aurangabad.

(An Autonomous Institute)

B.Voc. (Food Processing)

NSQF Level -6 On Job 7			Training/Qualification Packs*			
Teaching Scheme				Examination Scheme		
9				50 Marks		
15			ESE/PE	1:	50 Marks	
Fish and sea	Food processing Tec	hnici	an FIC/Q4001			
Purchase As	sistant Food and Agri	cultu	re FIC/Q7005			
	7-8 week 15 Fish and sea	Fish and sea Food processing Tec	Fish and sea Food processing Technicis	Fish and sea Food processing Technician FIC/Q4001 Purchase Assistant Food and Agriculture FIC/07005	TA 50 Examination TA 50	



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