

2. Academic Programmes in University/ Constituent College/Faculty

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S N	Name of the Constituent College/Faculty	Bachelor's		Master's		Ph. D.		Others including	
		Progr amme	Duratio n	Progr amme	Duratio n	Progr amme	Duratio n	Progr amme	Duratio n
1	College of Food Technology VNMKV,Par bhani	B.Tech. (Food Tech)	4 years	M.Tech (Food Tech)	2 years	Ph.D. (Food Tech)	3 years	--	

POST GRADUATE M.TECH (FOOD PROCESSING TECHNOLOGY) ACADEMIC PROGRAMME

Brief History of the PG Programme

The College of Food Technology is one of the unique and premier constitute college which was established in May 1976 of this University to fulfill the academic and practical aspirations of the people of Maharashtra and offering post graduate degree programme M. Tech (Food Technology) of two years duration since 1981. (Annexure-1: Letter describing permission for establish of UG and PG College). The nomenclature and curricula design as per the NCG recommendation upto 2021-22. As per the BSMA, the nomenclature of post graduate degree has been now changed to M.Tech (Food Processing Technology) in 2022-2023.

Objectives

- 1) To assess the holistic ways for efficient utilization of resources or Agri produce by owing their seasonal seasonal availability, perishability and variability.
- 2) To learn the innovative novel technologies and advancement in food processing
- 3) To render food technologist with an intellectually more skill oriented human resources
- 4) To disseminate the innovative and viable technologies for food and allied industries
- 5) To boost up and enhance the confidence of post graduates to become entrepreneur or establish start up in the field of food technology.

Accomplishment

- Revamping of post of post graduate programme in whole food technology throughout the country

- Imparting in-depth and comprehensive knowledge of the food technology and also arming the students with management skills and professional attitude.
- Development of human resources to cater the need of food processing industry, government, corporate sector and research organization in India and abroad.
- Exposure to the faculty to emphasize the need of innovation and mechanism to ensure the quality and excellence in the mandatory activity i.e. teaching, research and extension.
- Serve as centre point for food entrepreneurship development in the region.
- Collaboration with State Government for planning and implementation of different programme.

M. Tech. (Food Technology) upto 2021-22 as per National Core Group

1. **Qualification** : B. Tech (Food Technology) from Agricultural University.
2. **Admission** : Entrance exam will be conducted by respective universities based on the syllabus used by ICAR for all India entrance

Intake capacity : 15 including ICAR quota

4. **Distribution of credits**

Major	20 credits
Minor*	9 credits
Supporting#	5 credits
Seminar	1 credit
Thesis	20 credits
Total credits:	55

M. Tech. (Food Processing Technology) from 2022-23 as per BSMA

Major	21 credits
Minor*	8 credits
Supporting#	6 credits
Seminar	1 credit
CC	5 credits
Research Work	30 credits
Total credits:	71

*Minor Courses in the revised syllabus notified in three independent groups should be considered as supplementary to the major field where external evaluation of comprehensive

theory examination is a salient feature and hence to be common. One course from each group needs to be offered.

#supporting Courses in the revised syllabus can be compared with earlier minor courses. Being uncommon, supporting courses can easily be adjustable according to need of student/ department and not to be evaluated by the comprehensive examination

M. Tech (Food Processing Technology) syllabus

Course Code	Semester	Course Title	Credit Hrs.
Major courses		Proposed	
FPT 501	I	Emerging Technologies in Food Processing*	3 (2+1)
FPT 502	II	Emerging Technologies in Food Packaging*	3 (2+1)
FPT 503	III	Industrial Manufacturing of Food and Beverages*	3 (2+1)
FPT 508	I	Nutraceuticals and Specialty Foods	3 (2+1)
FPT 511	I	Traditional Foods	3 (2+1)
FPT 514	II	Food Ingredients and Additives	3 (2+1)
FPT 517	II	Enzymes in Food Processing	3 (2+1)
		Total	21 (14+7)
Note: Optional Major Subjects: The said courses are subjected to availability of infrastructure and facilities and to be decided by SAC committee			
FPT 504		Food Material and Product Properties	3 (2+1)
FPT 505		Cocoa and Chocolate Processing Technologies	3 (2+1)
FPT 506		Spices, Herbs and Condiments	2 (2+0)
FPT 507		Meat, Poultry, Fish and Egg Processing	3 (2+1)
FPT 509		Frozen and Concentrated Foods	2 (1+1)
FPT 510		Aseptic Processing and Packaging	3 (2+1)
FPT 512		Technologies of Convenience Foods	3 (2+1)
FPT 513		Food Powders and Premixes	3 (2+1)
FPT 515		Flavour Chemistry and Technology	3 (2+1)
FPT 516		Bio processing and Separation Technology	3 (2+1)
FPT 518		Food Process Automation and Modelling	2 (2+0)
FPT 519		Zero Waste Processing	2 (2+0)
FPT 520		Special Problem/ Summer Internship	2 (0+2)
Minor courses		Proposed	
FPE 508	I	Food Safety and Storage Engineering	3 (2+1)
FSQ 503	I	Advanced Food Chemistry	3 (2+1)

FSQ 504	II	Global Food Laws and Regulations	2 (2+0)
		Total	8 (6+2)

Note: Optional Minor Subjects: The said courses are subjected to availability of infrastructure and facilities and to be decided by SAC committee

Minor courses from discipline of Food Process Engineering, Food Safety and Quality and Processing and Food Process Engineering

FPE 502		Engineering Properties of Food Materials	3 (2+1)
FPE 504		Bioprocessing and Down Stream Engineering	3 (2+1)
FPE 506		Numerical Technique and Simulation	2 (1+1)
FSQ 506		Process and Products Monitoring for Quality Assurance	2 (2+0)
FSQ 508		Management of Food By-products and Waste	3 (2+1)
Supporting courses		Proposed	
FBM 501	I	Post-Harvest Management	3 (2+1)
FBM 503	III	Food Processing Entrepreneurship and Start up	1 (1+0)
FSQ 505	II	Food Safety Management Systems and Certification	2 (2+0)
Total			6 (5+1)

Note: Optional Supporting Subjects: The said courses are subjected to availability of infrastructure and facilities and to be decided by SAC committee

Supporting courses from discipline of Basic sciences, Food business management Food Process Engineering and Food Safety and Quality

FBM 502		Food Business Management	2 (2+0)
FSQ 507		Quality Concepts and Chain Traceability	2 (2+0)
FPE 505		Energy Management and Auditing in Food Industry	3 (2+1)
FPE 510		Operation Research	3 (2+1)
BSH 501		Research Methodology	2 (2+0)
BSH 502		Food Informatics	2 (1+1)

Master Seminar			
FPT 591	IV	Seminar	1 (0+1)
Masters Research			
FPT 599	III	Research Work	10 (0+10)
	IV	Research Work	20 (0+20)

***Compulsory Courses**

Common Courses: (Non-Credit)

Course code	Semester	Course Title	Credits
PGS 501	I	Library and Information Services	0+1
PGS 502	I	Technical Writing and Communications Skills	0+1
PGS 503	II	Intellectual Property and its management in Agriculture	1+0
PGS 504	II	Basic Concepts in Laboratory Techniques	0+1
PGS 505	III	Agricultural Research, Research Ethics and Rural Development Programmes	1+0
Total			5 (3+2)

Postgraduate Laboratories and Equipment

Clearly mention the department wise PG laboratories and equipment housed in individual laboratory in the college along with any other research unit.

PG Laboratories at college

Sr. no.	Laboratory
1.	PG Laboratory of Dept. of Food Chemistry and Nutrition
2.	PG Laboratory of Dept. of Food Microbiology and Safety
3.	PG Laboratory of Dept. of Food Process Technology
4.	PG Laboratory of Dept. of Food Engineering
5.	Niche Area Laboratory
6.	Arid Legumes Research Laboratory

Equipment Available at College of Food Technology, VNMKV, Parbhani

Table-61: Equipment available at college

Sr. No.	Name of equipment
1	Bernoulli's Theorem Apparatus
2	BOD Incubator
3	Bomb Calorimeter
4	Cryogenic Centrifuge Unit
5	Cryogenic Mixer Mill
6	Digital Colony Counter
7	Digital Turbidity Meter
8	Digital Water Bath
9	Freeze Drier
10	HPLC (High-Performance Liquid Chromatography)
11	Infra-Red Digestion Unit
12	Infra-Red Moisture Meter
13	Infra-Red Steam Distillation Unit
14	Lab Scale Fermenter
15	Metacentric Height Apparatus
16	Micro-Kjeldahl Steam Distillation Unit
17	Modified Atmospheric Chamber
18	Orbital Shaking Incubator
19	Phase Contrast Fluorescent Microscope
20	Refrigerated Centrifuge
21	Reynolds No. Apparatus
22	Spray Drier
23	Texturometer (TPA)
24	Ultrasonic Auto mixer
25	UVS Double Beam Spectrophotometer
26	UVS Single Beam Spectrophotometer
27	Vacuum Concentrator
28	Cold Storage
29	3D Printer
30	Fiber analyser
31	Vacuum oven
32	Sensitive balance Sartorius
33	Water activity meter with moisture meter
34	Rotary evaporator

35	Digital hand-held pH meter
36	Brix-acidity meter
37	Salt meter
38	Frying oil monitor
39	Portable refracto polarimeter
40	Deep freezer
41	Dehumidifier
42	Environmental control chamber
43	Digital thermo hygrometer
44	Digital micrometer

DOCTORAL DEGREEE Ph.D (FOOD PROCESSING TECHNOLOGY) ACADEMIC PROGRAMME

Brief History of the Ph.D. Programme

The College of Food Technology is one of the unique and premier constitutes college which was established in May 1976 of this University to fulfill the academic and practical aspirations of the people of Maharashtra and offering Doctoral degree programme Ph.D. (Food Technology) of three years duration since 2013. (Annexure-1: Letter describing permission for establish of UG and PG College). The nomenclature and curricula design as per the NCG recommendation upto 2021-22. As per the BSMA, the nomenclature of Ph.D. degree has been now changed to Ph.D. (Food Processing Technology) in 2022-2023.

Objectives

- 6) To assess the holistic ways for efficient utilization of resources or agri produce by owing their seasonal seasonal availability, perishability and variability.
- 7) To learn the innovative novel technologies and advancement in food processing
- 8) To render food technologist with an intellectually more skill oriented human resources
- 9) To disseminate the innovative and viable technologies for food and allied industries
- 10) To boost up and enhance the confidence of post graduates to become entrepreneur or establish start up in the field of food technology.

Accomplishment

- Revamping of post of post graduate programme in whole food technology throughout the country
- Imparting in-depth and comprehensive knowledge of the food technology and also arming the students with management skills and professional attitude.
- Development of human resources to cater the need of food processing industry, government, corporate sector and research organization in India and abroad.
- Exposure to the faculty to emphasize the need of innovation and mechanism to ensure the quality and excellence in the mandatory activity i.e. teaching, research and extension.
- More than 100 recommendations for development of various technologies for food product development.
- Serve as centre point for food entrepreneurship development in the region.

- Collaboration with State Government for planning and implementation of different programme.

Ph.D. (Food Technology) upto 2021-22 as per National Core Group

1. **Qualification** : M. Tech (Food Technology) from Agricultural University.
2. **Admission** : Entrance exam is conducted by MCAER, Pune. Selection is done on merit basis considering 70% scheme to Entrance Examination and 30% CGPA.

Intake capacity : 5 No. (Including ICAR Quota)

4. **Distribution of credits** :

Major	15 credits
Minor	8 credits
Supporting	5 credits
Seminar	2 credits
Research	45 credits
Total credits:	75 credits

Ph.D. (Food Processing Technology) from 2022-23 as per BSMA

Major	12 credits
Minor	6 credits
Supporting	5 credits
Seminar	2 credits
Research	75 credits
Total credits:	100 credits

Ph. D. (Food Processing Technology) Syllabus

Course Code	Semester	Course Title	Credit Hrs.
Major courses		Proposed	
FPT 601	I	Novel Technologies for Food Processing and Shelf-Life Extension	3 (3+0)
FPT 602	I	Food Packaging	3 (3+0)
FPT 604	II	Plant Food Products	3 (3+0)
FPT 606	III	Animal Food Products	3 (3+0)
Total			12 (12+0)
Note: Optional Major Subjects: The said courses are subjected to availability of infrastructure and facilities and to be decided by SAC committee			
FPT 603		Food Manufacturing Technology	3 (3+0)
FPT 605		Food Process Modeling and Scale up	3 (3+0)
FPT 607		Special Problem	2 (0+2)
Minor courses		Proposed	
FPE 602	I	Concentration and Drying Engineering	3 (3+0)
FSQ 603	II	Quality Assurance in Food Supply Chain	3 (3+0)
Total			(6+0)
Note: Optional Minor Subjects: The said courses are subjected to availability of infrastructure and facilities and to be decided by SAC committee			
Minor courses from discipline of Food Process Engineering or Food Safety and Quality			
FPE 606		Food Handling and Storage Engineering	3 (3+0)
FSQ 604		Formulation of Standards of Food Products, Packaging and Labeling	2 (2+0)
Supporting courses		Proposed	
FPE 605	II	Food Analytical Techniques	3 (1+2)
FSQ 607	I	Sensory Evaluation of Foods	2 (2+0)
Total			5 (3+2)
Seminar			
FPT 691	III	Seminar I	1 (0+1)
FPT 692	IV	Seminar II	1 (0+1)
FPT 699		Doctoral Research	75 (75+0)