

Lecture Plan of FPT-502 Thermal Processing of Fish and Fishery Products

Sl. No.	Topic of theory	No. of lecture	Name of the Course Instructor
1.	Principles of thermal processing and classification of foods	1	Dr. Pooja Saklani
2.	Mechanisms of heat transfer: unsteady state of transfer; conduction, convection, radiation; dielectric and microwave heating, heat penetration, cold point	2	
3.	low acid, medium acid and acid foods, absolute sterility, statistical sterility, commercial sterility, pasteurization and sterilization, sous-vide	2	
4.	Canning process: Steps involved, process flow, additives, principles and process details, canning machinery and equipment	4	
5.	Canning process for fish/shellfish, value added canned products	3	
6.	Spoilage of canned food, physical, chemical and microbial, examination of cans and seams, effect of canning on nutrient profile	3	
7.	Basis of Thermal Process: Heat resistance of bacteria and spores, decimal reduction time, thermal death time	3	
8.	"D", "Z" and "F0" values, 12 D value, Significance of survivor curve and thermal death curve	3	
9.	Thermal process calculations: determination of process time and F value: graphical, formula, nomogram methods	4	
10.	Emerging trends in containers and heat treatment processes: HTST, UHT processing and aseptic canning	2	
11.	Flexible packing, retort pouch processing of fish and fishery products principles and techniques; Combination and synergistic effects	2	
12.	Canning plant location: practical considerations, canning plant facilities, layout & design. Automation in canning lines.	3	
TOTAL		32	

Sl. No.	Topic of practical	No. of lecture	Name of the Course Instructor
1.	Operation of over pressure retort for canning	1	Dr. Pooja Saklani
2.	Canning operations for commercial important finfishes	2	
3.	Canning of shrimp and Cephalopods	2	
4.	Retort pouch processing of table fishes, bivalves, crustaceans	3	
5.	Examination of canned fishery products, Sensory evaluation of canned foods	3	
6.	Examination of can seams	2	
7.	Sterility test of canned products	2	
8.	Isolation of Clostridium spp, from canned foods	3	
9.	Heat Penetration Curve and Calculation of F0 Value, Z value, process time	3	
TOTAL		21	



Signature of Course Instructor