

## Lesson Plan

**Name of the Faculty** : Mr. Viraj Krishna Mishra  
**Discipline** : Biotechnology  
**Semester** : 8<sup>th</sup>  
**Subject** : Food Process Engineering (BT-428N)  
**Lesson Plan Duration** : 15 Weeks (From Feb, 2021 to Jun, 2021)  
**Work Load (Lecture/Practical) per week (in hours):** Lecture- 03, Tutorials: 01

Week	Theory	
	Lecture Day	Topic(including assignment /test)
1 <sup>st</sup>	1 <sup>st</sup>	Scope and importance of food processing
	2 <sup>nd</sup>	Properties of food- Physical, thermal, mechanical, sensory
	3 <sup>rd</sup>	Raw material preparation- Cleaning, sorting, grading, peeling.
2 <sup>nd</sup>	4 <sup>th</sup>	Blanching and Pasteurization.
	5 <sup>th</sup>	Freezing- Dehydration- canning- additives- fermentation-
	6 <sup>th</sup>	Extrusion cooking- hydrostatic pressure cooking- dielectric heating-
3 <sup>rd</sup>	7 <sup>th</sup>	Micro wave processing and aseptic processing
	8 <sup>th</sup>	Infra red radiation processing- Concepts and equipment used.
	9 <sup>th</sup>	Summary of Unit I
4 <sup>th</sup>		Assignment 1
	10 <sup>th</sup>	Moisture content- definition,
	11 <sup>th</sup>	Methods of determination- direct and indirect methods.
5 <sup>th</sup>	12 <sup>th</sup>	Equilibrium moisture content- Hysterises effect-
	13 <sup>th</sup>	Psychrometry- properties of air, water- vapour mixer, .
	14 <sup>th</sup>	Problems in psychrometry.
6 <sup>th</sup>	15 <sup>th</sup>	Drying-mechanisms-constant rate period.
	16 <sup>th</sup>	Falling rate period- methods
	17 <sup>th</sup>	Equipment used- factors affecting rate of drying
7 <sup>th</sup>	18 <sup>th</sup>	Discussion
	19 <sup>th</sup>	Summary and discussion about Unit II
		Assignment 2/Class Test 1
8 <sup>th</sup>	20 <sup>th</sup>	Size reduction
	21 <sup>st</sup>	Size reduction
	22 <sup>nd</sup>	Size reduction
9 <sup>th</sup>	23 <sup>rd</sup>	Fibrous foods
	24 <sup>th</sup>	Dry foods and liquid foods
	25 <sup>th</sup>	Dry foods and liquid foods
10 <sup>th</sup>	26 <sup>th</sup>	Theory and equipments- membrane separation
	27 <sup>th</sup>	Filtrationequipment and application.
	28 <sup>th</sup>	Filtrationequipment and application.
11 <sup>th</sup>	29 <sup>th</sup>	Summary of Unit III
	30 <sup>th</sup>	Assignment 3/ Class Test
	31 <sup>st</sup>	Food Preservation By Cooling
12 <sup>th</sup>	32 <sup>nd</sup>	Refrigeration
	33 <sup>rd</sup>	Freezing-Theory
	34 <sup>th</sup>	Freezing time calculation
13 <sup>th</sup>	35 <sup>th</sup>	Methods of freezing
	36 <sup>th</sup>	Freezing equipments
	37 <sup>th</sup>	Freeze drying and freeze concentration
13 <sup>th</sup>	38 <sup>th</sup>	Thawing, effect of low temperature on food.
	39 <sup>th</sup>	Water activity and methods to control water activity.

14 <sup>th</sup>	40 <sup>th</sup>	<b>Revision</b>
	41 <sup>st</sup>	Revision
	42 <sup>nd</sup>	Revision
15 <sup>th</sup>	43 <sup>rd</sup>	Revision
	44 <sup>th</sup>	Discussion on Questions of KUK Semester papers.
	45 <sup>th</sup>	Discussion on Questions of KUK Semester papers.