

To,

Regional Director

Indira Gandhi National Open University

Regional Centre, SCO-208, Sec.-14, Panchkula Haryana

No. PIC/C/ 285 dated 27-9-2017


Subject: - Regarding Induction Meeting

Dear Sir,

With due respect it is stated that the Induction Meeting will be held at our study centre (2235 P) on dated 7/10/2017, at 9:30AM.

It is requested that please make it convenient to attend above said Induction meeting.

Attached :- Counselling schedule

  
Mr. Harpreet Singh 27/9/2017

Programme Incharge

IGNOU Study Centre 2235P

Chatamli Ropar

# Diploma Programme in Dairy Technology (DDT)

## Counselling Schedule

### Sessions

Theory : 25 Sessions of 2 hours each  
 Practical : 80 Sessions of 4 hours each  
 72 Sessions Guided and 8 Sessions Unguided

### Total Days

Theory : 8  
 Practical : 40 (36 Guided and 4 Unguided)

## I. Counselling Schedule for THEORY

- Total sessions: 25, Duration: 2 hours / session
- First session: Orientation to the Programme
- Second to Twenty Fifth Session: All Eight Courses - Three sessions for Each Course
- Total Days: 8 Days

Sl. No.	Day	Timing	Session*	Course Code and Title
1.	I 7-10-2017	9:30 - 11:30 AM	1	Orientation Programme
		11:45 AM - 1:45 PM	2	Course – I (BPVI-011) Milk Production and Quality of Milk
		1:45 - 2:30 PM		Lunch
		2:30 – 4:30 PM	3	Course – II (BPVI-012) Dairy Equipment and Utilities
2.	II 8-10-2017	9:30 - 11:30 AM	4	Course – III (BPVI-013) Milk Processing and Packaging
		11:45 AM - 1:45 PM	5	Course – IV (BPVI-014) Dairy Products - I
		1:45 - 2:30 PM		Lunch
		2:30 – 4:30 PM	6	Course – V (BPVI-015) Dairy Products – II
3.	III 14-10-17	9:30 - 11:30 AM	7	Course – VI (BPVI-016) Dairy Products - III
		11:45 AM - 1:45 PM		Course – VII (BPVI-017) Quality Assurance
		1:45 - 2:30 PM	8	Lunch
		2:30 – 4:30 PM	9	Course – VIII (BPVI-018) Dairy Management and Entrepreneurship
4.	IV 15-10-17	9:30 - 11:30 AM	10	Course – I (BPVI-011) Milk Production and Quality of Milk

		11:45 AM - 1:45 PM	11	Course – II (BPVI-012) Dairy Equipment and Utilities
		1:45 - 2:30 PM		Lunch
		2:30 – 4:30 PM	12	Course – III (BPVI-013) Milk Processing and Packaging
5.	V  21-10-17	9:30 - 11:30 AM	13	Course – IV (BPVI-014) Dairy Products - I
		11:45 AM - 1:45 PM	14	Course – V (BPVI-015) Dairy Products – II
		1:45 - 2:30 PM		Lunch
		2:30 – 4:30 PM	15	Course – VI (BPVI-016) Dairy Products - III
6.	VI  22-10-17	9:30 - 11:30 AM	16	Course – VII (BPVI-017) Quality Assurance
		11:45 AM - 1:45 PM	17	Course – VIII (BPVI-018) Dairy Management and Entrepreneurship
		1:45 - 2:30 PM		Lunch
		2:30 – 4:30 PM	18	Course – I (BPVI-011) Milk Production and Quality of Milk
7.	VII  28-10-17	9:30 - 11:30 AM	19	Course – II (BPVI-012) Dairy Equipment and Utilities
		11:45 AM - 1:45 PM	20	Course – III (BPVI-013) Milk Processing and Packaging
		1:45 - 2:30 PM		Lunch
		2:30 – 4:30 PM	21	Course – IV (BPVI-014) Dairy Products - I
8.	VIII  29-10-17	9:30 - 11:30 AM	22	Course – V (BPVI-015) Dairy Products – II
		11:45 AM - 1:45 PM	23	Course – VI (BPVI-016) Dairy Products – III
		1:45 - 2:30 PM		Lunch
		2:30 – 4:30 PM	24	Course – VII (BPVI-017) Quality Assurance
		4:30 – 6:30 PM	25	Course – VIII (BPVI-018) Dairy Management and Entrepreneurship

\* One session of 2 hours each.

## Diploma Programme in Dairy Technology (DDT)

### II. Suggestive Counselling Schedule for PRACTICAL

#### A. Guided Practical

Sl. No.	Practical (Days)	Code & Title of the Course	Session*	Sl. No. & Title of the Experiments
1.	1 4-11-17	Introduction to the Practical	1	<b>Orientation to Practical/ Lab</b>
		Course – I (BPVI-011) Milk Production and Quality of Milk	2	1. Identification of different milch breeds of cattle, buffaloes, goats and external anatomy of dairy animals 2. Judging of dairy animals 6. Clean milk production
2.	2 5-11-17	Course – I (BPVI-011) Milk Production and Quality of Milk	3	3. Identification of various feeds and fodders for dairy animals 4. Preparations of balanced rations, calf starters, milk replacer and feeding of calves 5. Housing of animals and maintenance of hygienic conditions at farm 7. Field/Farm visits
			4	1. Preparation of standard 0.1N sodium hydroxide solution 2. Preparation of standard 0.1N hydrochloric acid 3. Preparation of gerber acid for determination of fat in milk
3.	3 11-11-17	Course – I (BPVI-011) Milk Production and Quality of Milk	5	4. Sampling of milk 5. Platform test - (i) colt – on – boiling test 6. Platform test – (ii) alcohol test 7. Platform test – (iii) sediment test
			6	8. Determination of fat in milk by Gerber method 9. Determination of solid – not – fat (SNF) in milk 10. Determination of total solid (TS) in milk
4.	4 12-11-17	Course – I (BPVI-011) Milk Production and Quality of Milk	7	11. Specific gravity of milk 12. Determination of titratable acidity of milk 13. Determination of pH of milk
			8	14. Detection of starch in milk 15. Detection of cane sugar in milk 16. Detection of glucose in milk
5.	5 18-11-17	Course – I (BPVI-011) Milk Production and Quality of Milk	9	17. Detection of urea in milk 18. Detection of ammonium sulphate in milk 19. Detection of sodium carbonate or bicarbonate as neutralizer in milk
			10	20. Resazurin reduction test 21. Methylene blue reduction (MBR) test 22. Preparation of microbial media
6.	6 19-11-17	Course – I (BPVI-011) Milk Production and Quality of Milk	11	23. Demonstration of presumptive coliform test 24. Demonstration of standard plate count method 25. Staining methods

		Course – II (BPVI-012) Dairy Equipment and Utilities	12	1. To learn elementary layout drawings of utilities 2. Study of various workshop tools 3. Study of different sanitary S.S. pipes, fittings and gaskets 6. To study different types of thermometers, pressure gauge and flow meters
7.	7 25-11-17	Course – II (BPVI-012) Dairy Equipment and Utilities	13	5. Study and sketch the details of milk tanker, storage tanks and silos
			14	7. Study of refrigeration system: compressor (reciprocating), condensers (shell & tube, atmospheric) and expansion devices (thermostatic) expansion valve/capillary tube 8. Study of parts and operation of a cold storage plant and an ice bank unit
8.	8 26-11-17	Course – II (BPVI-012) Dairy Equipment and Utilities	15	9. Study different parts and learn the operation of plate chiller and bulk milk cooler 4. Dismantling and assembling of milk pumps
			16	10. Study of water supply system and water softening plant 12. Study of a dairy effluent plant
9.	9 2-12-17	Course – II (BPVI-012) Dairy Equipment and Utilities	17	11 Study the constructional details of Fire tube and water tube boilers 15. Study of different safety measures to be adapted in a dairy plant. 16. To study the control and safety mountings of a steam boiler
			18	13. To study the different parts of single-phase and three phase induction motors 14. Starting of 3 phase squirrel cage induction motors by direct on line and star-data starter
10.	10 3-12-17	Course– III (BPVI-013) Milk Processing and Packaging	19	1. Reception of milk 2. Straining, filtration & clarification of milk 3. Chilling & storage of milk
			20	4. Study of cream separator 5. Study of separation of milk 6. Standardization of milk
11.	11 9-12-17	Course– III (BPVI-013) Milk Processing and Packaging	21	7. Study of batch pasteurizer and high temperature short time (HTST) pasteurizer 8. Pasteurization of milk 9. Determination of efficiency of pasteurization
			22	10. Study of homogenizer, homogenization of milk and determination of homogenization efficiency
12.	12 10-12-17	Course– III (BPVI-013) Milk Processing and Packaging	23	11. Study of Milk Sterilizer, Sterilization of Milk and Determination of Sterilization efficiency 13. Preparation of Flavoured Milk, Reconstituted Milk, Toned and Double Toned Milk
			24	12. Study of packaging system of milk
13.	13 16-12-17	Course–IV (BPVI-014) Dairy Products - I	25	14. Cleaning of equipment 15. Sanitization of equipment 16. Assessment of cleaning and sanitization efficiency
			26	1. Preparation and standardization of cream 2. Preparation of sterilized cream

14.	14 17-12-17	Course-IV (BPVI-014) Dairy Products - I	27	3. Preparation of butter starter 4. Preparation of cream for butter making
			28	5. Construction and operation of power churn 6. Construction and operation of butter packaging machine
15.	15 23-12-17	Course-IV (BPVI-014) Dairy Products - I	29	7. Preparation of <i>desi</i> butter ( <i>makkhan</i> ), and cooking butter
			30	8. Preparation of Table butter
16.	16 24-12-17	Course-IV (BPVI-014) Dairy Products - I	31	9. Preparation of <i>ghee</i> 10. Agmark grading of <i>ghee</i>
		Course - V (BPVI-015) Dairy Products - II	32	1. Preparation of <i>khoa</i>
17.	17 30-12-17	Course - V (BPVI-015) Dairy Products - II	33	3. Preparation of <i>peda</i> 4. Preparation of <i>burfi</i>
			34	2. Preparation of <i>gulabjamun</i>
18.	18 31-12-17	Course - V (BPVI-015) Dairy Products - II	35	6. Preparation of <i>kalakand</i> and milk cake
			36	8. Preparation of Chhana
19.	19 6-1-2018	Course - V (BPVI-015) Dairy Products - II	37	13. Preparation of paneer
			38	10. Preparation of <i>sandesh</i> 11. Preparation of <i>rasmalai</i>
20.	20 7-1-18	Course - V (BPVI-015) Dairy Products - II	39	9. Preparation of <i>rasogolla</i> 12. Preparation of <i>Chhena Murki</i>
			40	5. Preparation of <i>rabri</i> 7. Preparation of <i>kheer</i>
21.	21 13-1-18	Course - V (BPVI-015) Dairy Products - II	41	14. Study of vacuum pan/double effect/triple effect of evaporator
			42	15. Study of manufacture of spray dried milk powder
22.	22 14-1-18	Course - V (BPVI-015) Dairy Products - II	43	16. Preparation of value added products from dried milk-dairy whitener
			44	17. Visit to dairy product manufacturing plant (Ghee, Butter, Khoa, Dahi Condensed and Milk Powder)
23.	23 20-1-18	Course- VI (BPVI-016) Dairy Products - III	45	1. Preparation of starter culture 2. Preparation of <i>dahi</i>
			46	3. Preparation of <i>mishti dahi</i> 5. Preparation of yoghurt
24.	24 21-1-18	Course- VI (BPVI-016) Dairy Products - III	47	6. Preparation of <i>shrikhand</i>
			48	4. Preparation of <i>lassi</i> / fermented drinks/ salted butter milk
25.	25 27-1-18	Course- VI (BPVI-016) Dairy Products - III	49	11. Calculation of ingredients for ice cream mix 12. Preparation of ice-cream mix 13. Preparation of ice cream and determination of overrun 14. Visit to ice-cream factory
			50	16. Preparation of softy 17. Manufacture of <i>kulfi</i>
26.	26 28-1-18	Course- VI (BPVI-016) Dairy Products - III	51	18. Manufacture of casein 19. Study of manufacture of lactose
			52	7. Preparation of cheddar cheese from cow milk

27.	27 3-2-18	Course- VI (BPVI-016) Dairy Products - III	53	8. Preparation of mozzarella cheese 9. Preparation of processed cheese 10. Preparation of processed cheese spread
28.	28 4-2-18	Course-VII(BPVI-017) Quality Assurance	54	15. Visit to cheese factory
			55	1. Familiarization with laboratory equipment and instruments 4. Determination of fat in <i>milk, cream, butter, khoa, paneer, Ice cream, milk powder</i> 5. Determination of titratable acidity and pH of milk products
			56	6. Determination of solubility of milk powder 7. Determination of acid value in <i>ghee</i>
29.	29 10-2-18	Course-VII (BPVI-017) Quality Assurance	57	8. Microbiological analysis of milk products
			58	9. Microbiological analysis of air and water. 10. In-line testing by rinse and swab methods.
30.	30 11-2-18	Course-VII(BPVI-017) Quality Assurance	59	11-15. Sensory evaluation of <i>milk, cream, butter, ghee, ice cream, dahi and other products</i>
			60	16-20. Sensory evaluation of <i>khoa, paneer, milk powder, shrikhand, cheese and other products</i>
31.	31 17-2-18	Course-VII(BPVI-017) Quality Assurance	61	2. Listing of quality control agencies at national level and international level 3. Standards specification (chemical and microbiological) of milk and milk products
		Course-VIII(BPVI-018) Dairy Management and Entrepreneurship	62	7. Identification of entrepreneurial skills
32.	32 18-2-18	Course- VIII (BPVI-018) Dairy Management and Entrepreneurship	63	3. Visit to nearby dairy cooperative society and study working aspects 4. Calculation of milk payment based on fat and two axis pricing policy of Dairy Cooperative Society (DCS).
			64	5. Designing milk routes based on data. 6. Preparation of ledger, trial-balance and balance-sheet of DCS.
33.	33 24-2-18	Course- VIII (BPVI-018) Dairy Management and Entrepreneurship	65	1. Identification of sources for milk losses during processing of milk and preparation of milk products. Preparation of check list for controlling the losses. 2. Identification of parameters for production efficiency 12. Preparation of check list for evaluation of performance of a dairy plant
			66	11. Visit a nearby milk union/dairy and study the store-keeping practices, inventory control, and maintenance of various records preparation
34.	34 25-2-18	Course- VIII (BPVI-018) Dairy Management and Entrepreneurship	67	9. Prepare a questionnaire to assess strength and weakness of any milk or milk product marketing by a nearby milk union or a dairy and also administer it.
			68	10. Visit a nearby milk union/dairy and prepare a checklist of problems in procurement and milk distribution.



35.	35 3-3-2018	Course- VIII (BPVI-018) Dairy Management and Entrepreneurship	69	13. Load estimation of utilities
			70	8. Prepare a project report to set up milk parlour/a small dairy plant.
36.	36 4-3-2018	Course- VIII (BPVI-018) Dairy Management and Entrepreneurship	71	14. Market information report on different dairy products/Preparation
			72	14. Preparation of bankable report

## B. Unguided Practicals

Sl. No.	Practical (Days)	Course Code and Title	Session
37.	37 10-3-2018	Course- I (BPVI-011) Milk Production and Quality of Milk	73
		Course-II (BPVI-012) Dairy Equipment and Utilities	74
38.	38 11-3-2018	Course-III (BPVI-013) Milk Processing and Packaging	75
		Course-IV (BPVI-014) Dairy Products – I	76
39.	39 17-3-2018	Course – V (BPVI-015) Dairy Products – II	77
		Course –VI (BPVI-016) Dairy Products-III	78
40.	40 18-3-2018	Course-VII (BPVI-017) Quality Assurance	79
		Course-VIII (BPVI-018) Dairy Management and Entrepreneurship	80

**One Practical Session = 4 hours**

**\* One practical session of 4 hours each.**