

## ANALYTICAL INSTRUMENT OPERATOR

(CPC/Q 4304)

### CURRICULUM/SYLLABUS

S.No.	Topic	Description	Duration (in Notional Hours)	
			Theory	Practical
1	Safety Concepts and Practice	1. To study & understanding of Safety and General precautions 2. To study basic knowledge of Safety procedures (firefighting, first aid) within the organization 3. To study various types of PPEs and their usage in Pesticide industry. 4. To understand risks/hazards associated with each occupation in the organization 5. To study personal hygiene and importance of safe and clean working environment 6. To understand and obey the rules and guidelines appropriate to the general populace or specific jobs 7. Develop and implement safe work procedures and rules	16	36
2	Measuring Equipment's, Hand Tools and Practice	1. To study the importance of various measuring instruments as accuracy of a component produced depends largely on the degree of precision of the measuring instruments 2. To understand the various methods of measurement including Direct measuring instrument, indirect measuring instruments, absolute measurements & comparative measurements	16	40
3	Introduction to Pesticide Chemicals	1. Introduction to pesticides 2. Study of fundamental terminology of pesticides 3. Classification of pesticides, Organochlorines and Organophosphate pesticides with examples	32	32
4	Introduction to Analytical Instruments for pesticide residue analysis	Basic Knowledge of instruments like GC-MS, HPLC, LC-MS, IR, UV, Karl Fischer Auto titrator	24	36
5	Understand the	Qualitative Analysis	76	180

	chemical processing methodology	Quantitative Analysis		
6	Operation of Different types of Analytical Instruments Working on Analytical Instruments such as GC-MS,HPLC etc	Introduction to Analytical Instruments- Basics about Pesticides, Testing by simple method, Flash point, etc. Study of Different Types of analytical instruments Study of Different Types of analytical instruments- Like GC-MS, HPLC etc	100	300
7	Communication /soft skills / Basic knowledge of computers	1. Study of Need for communicate, communication and its importance 2. Types of communication, verbal, non-verbal, written, e-mail, talking on phone, non-verbal communication, barriers to communication and dealing with barriers, communication content development, speaking, asking questions etc. 3. Handling nervousness/discomfort, quality of communication 4. Listening skills, motivational training, facing interviews, time management skills etc. 5. Behavioural Science and Entrepreneurship development 6. Basic knowledge of computer & its operation	24	16
8	Industry Visit	Visit to Industries	0	32
	<b>Total Hours</b>		<b>288</b>	<b>672</b>
<b>Total Programme Duration: 960 Notional Hours</b>				

**Equipment Required:**

LCD Projector, White Board with marker and duster, charts etc  
Fire Extinguishers  
Instruments like GC-MS, HPLC etc.  
Audio, Video Apparatus.

**Trainer's Qualification:**

Sl.No.	Area	Details
1	Minimum Educational Qualification	M.Tech in chemical engineering or B.Tech. with 5 years experience in chemical manufacturing plant
2	Experience	2-3 years of experience in chemical plant handling services.