

1	Name of Course	C. C. IN LABORATORY ASSISTANT (Testing & Calibration Lab) (W.E.F. 2017-2018)																																		
2	Couse code	308109																																		
3	Max No of Students Per Batch	25																																		
4	Duration	6 Months																																		
5	Type	Part Time																																		
6	No of Days/Week	6 Days																																		
7	No of Hours Per Day	4 Hours																																		
8	Required Space	Class Room – 200 sq.ft. & for Practical MOU with NABL accredited Laboratory having min. Three Parameter																																		
9	Minimum Entry Qualification for Student	SSC OR NTC/NAC (Mechanical/Electrical/Electronics/Chemical Group)																																		
10	Objective of Course	To prepare students to take the laboratory Assistant job and perform the duties in accordance with the requirements of accreditation bodies/clients.																																		
11	Employment Opportunity	Competent & qualified laboratory Assistant can be employed in various testing and calibration laboratories in India.																																		
12	Teacher’s Qualification	Degree in Engineering / Science with minimum 5 years of experience in industry or laboratories																																		
13	Training System	<div>Training System Per Week</div> <table><tr><td>Theory</td><td>Practical</td><td>Total</td></tr><tr><td>06 Hrs</td><td>18 Hrs</td><td>24 Hrs</td></tr></table>							Theory	Practical	Total	06 Hrs	18 Hrs	24 Hrs																						
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14	Exam. System	<table><tr><th>Sr. No.</th><th>Paper Code</th><th>Name of subject</th><th>TH /PR</th><th>Hours</th><th>Max. Marks.</th><th>Mini. Marks</th></tr><tr><td>1</td><td>30810911</td><td>Laboratory Assistant</td><td>TH-I</td><td>3 hrs.</td><td>100</td><td>35</td></tr><tr><td>2</td><td>30810921</td><td>Laboratory Practice</td><td>PR-I</td><td>3 hrs.</td><td>300</td><td>150</td></tr><tr><td></td><td></td><td>Total</td><td></td><td></td><td>400</td><td>185</td></tr></table>	Sr. No.	Paper Code	Name of subject	TH /PR	Hours	Max. Marks.	Mini. Marks	1	30810911	Laboratory Assistant	TH-I	3 hrs.	100	35	2	30810921	Laboratory Practice	PR-I	3 hrs.	300	150			Total			400	185						
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	Unit Title : What is Laboratory, Various types of Laboratory , Common IS for Lab?			
	Learning Outcome	Knowledge Evaluation	Performance Evaluation	Teaching and Training Method
Location: Class room	<p>Types of laboratories Laboratory function</p> <p>Knowledge of various types of standards followed in Lab</p> <p>Identify the components and activities of Laboratories</p> <p>Understand role and functions of lab</p>	<p>Describe the different types of laboratories laboratories function</p> <p>Describe the role of laboratories in testing of products Calibration laboratories</p> <p>standards use in Lab</p> <p>State the functions of a Laboratories in testing lab</p> <p>Enlist the services provided by the Laboratories for different testings</p> <p>Describe the role and functions of a lab</p> <p>Describe the precaution in labs</p>	<p>Identify different types of laboratories systems followed in laboratories testing lab</p> <p>calibration lab</p> <p>describe use fullness of IS in Lab Identify the various components of a Laboratories System Identify the various equipment used in Laboratories</p> <p>Enlist the requirements for testing & safety at testing & calibration lab</p>	<p>Interactive Lecture: About laboratories About Indian standards in Labs Activity: Visit a laboratory testing & calibration enlist all the services and the equipment used in the lab</p> <p>Interactive Lecture: Role and function of Laboratories Activity: Visit a Laboratories to study the role and functions. Prepare report for the Student Portfolio. Interactive Lecture: laboratories & standards Activity: Visit to lab or and observe the available testing methods used in lab and prepare a report highlighting the services provided in the lab</p>

	Unit Title : Laboratory Management and its responsibilities Legal and Moral			
	Learning Outcome	Knowledge Evaluation	Performance Evaluation	Teaching and Training Method
Location:	Describe the responsibilities of testing & calibration lab	Describe the role of rehabilitation facility in patient recovery. Differentiate between services provided at various Rehabilitation/Convalescent Centre	Identify the facilities at lab	Interactive Lecture: Role and responsibilities of Management Activity: Visit a testing lab & office and see the functioning of Management
	Describe the legal responsibility and the of lab	Describe the role of Management & responsibility	Identify the equipment and materials that are under statutory requirement	Interactive Lecture: Testing equipment requiring permissions Activity: Visit to lab check equipment's requiring legal permission
		Enlist the facilities/ which require statutory clearance		
	Demonstrate the knowledge of lab	Describe the facilities requiring statutory permission	Assess the need for facilities	Interactive Lecture: lab facilities Activity: legal & moral responsibilities of Good lab
			Identify the facilities	
			Identify the services	

	Unit Title :Sample preparation & Laboratory Records.			
	Learning Outcome	Knowledge Evaluation	Performance Evaluation	Teaching and Training Method
Location: Classroom/ Laboratory	<p>Identify the records in calibration & testing lab</p> <p>Sample preparation methods</p> <p>actual sample preparation</p> <p>Prepare a sample record</p> <p>Prepare demo sample</p>	<p>· Describe the essential duties and responsibilities of record keeper</p> <p>How to prepare sample, precaution</p> <p>Follow standard methods for sample preparation</p> <p>Describe various activities of patient's daily care routine including bathing, feeding, excreta disposal, transfer of patients, medication, etc.</p>	<p>Demonstrate the knowledge of maintaining records</p> <p>demo sample preparation</p> <p>Prepare a daily receipts of sample record</p>	<p>Interactive Lecture:</p> <p>Role and functions of record keeping</p> <p>methods of sample preparation</p> <p>Activity:</p> <p>check records at Lab</p> <p>check records at Calibration lab</p> <p>sample preparation accuracy</p> <p>Interactive Lecture:</p> <p>Records & retention period</p> <p>sample prepare methods</p> <p>Activity:</p> <p>Role play record as evidence</p> <p>records for Auditing</p> <p>tell them to Identify and apply the most suitable records for lab</p> <p>Prepare samples of various materials</p>

	Identify the qualities of a good 5s implemented Lab	Describe the good qualities of maintaining 5s	List the do's and don'ts in Labs setup Demonstrate the knowledge of 5s & temp control	Activity: Preparation of check list for 5s in calibration lab their understanding and tell them to compare with standard checklist. temp control check list
	Identify lab wastes and disposal procedure.	Describe the characteristics of various types of wastes in Lab	Demonstrate the knowledge of wastes Identify the colour code for disposal of waste temp & effect on test result.	Interactive Lecture: elimination & disposal of Waste Activity: Visit to lab to study waste generated & 5s implementation
	Instruments for Lab temp control			

Unit Title: laboratory equipment and calibration schedule				
	Learning Outcome	Knowledge Evaluation	Performance Evaluation	Teaching and Training Method
Location : Classroom/ Laboratory	Demonstrate lab equipment calibration	Describe equipment accuracy, calibration	Practice equipment accuracy calibration systems Enlist the calibration schedule to be followed to ensure	Interactive Lecture: equipment selection maintenance calibration

		Describe the importance of calibration	correct results	Activity: Demonstrate calibration methodology
	Identify factors affecting test equipment	Describe the factors that affect test equipment	Demonstrate in house calibration Demonstrate the knowledge of maintaining test equipment	Interactive Lecture: test equipment maintenance calibration Activity: Preparation of checklist of equipment maintenance
	Perform calibration of sample instrument	Describe the method of calibration	Prepare a plan for maintaining equipment	Interactive Lecture: equipment record Activity: equipment selection calibration
	Demonstrate personal grooming	Describe the importance of good appearance and grooming in life and work place.	Demonstrate good grooming habits as per norms of healthcare industry.	Interactive Lecture: How to prepare and follow daily equipment maintenance plan? Activity: schedule accuracy temperature condition

		Describe the side effects of immunization		Activity: Discussion on the process of issuance of test report
	Identify the key components of test report	Describe the various aspects of immunization schedule chart Describe the key components of test report	Identify the key components of a Universal Immunization Programmed Enlist the diseases covered under UIP	Interactive Lecture: Universal Immunization Programmed Activity: Enlisting of diseases covered under Universal Immunization Programmed.
	Identify the key components of issue of test report	Describe the key components of test report	Identify the key components of a Pulse Immunization Programmed	Interactive Lecture: Pulse Immunization Programmed Activity: Enlisting of diseases covered under Pulse Immunization Programmed.

	Unit Title: Identification and traceability from receipt of sample to final report			
	Learning Outcome	Knowledge Evaluation	Performance Evaluation	Teaching and Training Method
Class room	Identify elements of traceability	Describe different elements of traceability & its importance	Identify elements of traceability Describe the knowledge of effective sample routing	Interactive Lecture: Traceability & its importance receipt storage Activity: sample receipt to report
	Demonstrate effective traceability sample collection & storage	Describe the factors affecting effective traceability & storage of sample	identify traceability issues	Interactive Lecture: Factors affecting Effective traceability Activity: Follow up of sample from receipt to report confidentiality
