

**SYLLABUS & CURRICULUM  
of  
DIPLOMA IN B.C.G. TECHNICIAN AND  
TUBERCULOSIS PROGRAMME MANAGEMENT  
COURSE**

**Uttar Pradesh State Medical Faculty, Lucknow.**

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## **OBJECTIVES OF THE COURSE**

To prepare a Diploma in B.C.G. Technician who –

- Can know about the vaccine and immunization schedule.
- To help in the prevention of diseases those vaccinated.
- Can educate the people about the spreading, prevention and drug programme on tuberculosis.
- Can know about the sterilization.
- Can understand the role, maintenance & Transportation (Handling) of vaccine.
- Can perform basic procedure like IV/IM/SC injection.
- Can maintain record of vaccination.
- Can provide Psychological support to person and counsel his/her relative.
- Can know about the DOT's.

# OUTLINE OF CURRICULUM

## DIPLOMA IN B.C.G. (BACILLE CALMETTE GUERIN)

### TECHNICIAN COURSE

#### FIRST YEAR

Paper	Name of Paper	Internal	External	Total
Theory First Paper	Anatomy, Physiology & Biochemistry	25	75	100
Theory Second Paper	Tuberculosis – Demography, Epidemiology, Natural History of Tuberculosis	25	75	100
Practical		25	75	100

#### SECOND YEAR

Paper	Name of Paper	Internal	External	Total
Theory First Paper	Basic of relevant pathology, Bacteria, Immunization its Hazard.	25	75	100
Theory Second Paper	National programme & Policies on control of Tuberculosis, B.C.G. Vaccine, Route of administration of Injection, Diagnosis, Management & Complication of Tuberculosis, HIV & Tuberculosis coordination.	25	75	100
Practical		25	75	100

**Outline of Curriculum  
of  
DIPLOMA IN B.C.G. TECHNICIAN COURSE**

**FIRST YEAR**

**Theory (Classes : 9 AM to 12 PM)**

**First Paper : Syllabus Covers**

1. General Anatomy and Physiology (Osteology, Cytology, Histology and only basic of all organ system).
2. Only basics of relevant Biochemistry.

**Second Paper : Syllabus Covers**

1. Tuberculosis – Definition, Incubation Period, Etiology, Pathogenesis, Clinical feature.
2. Demography & Epidemiology of Tuberculosis: Problem Statement – India, World.
3. Natural History of Tuberculosis.

# **FIRST YEAR**

## **Practical (Classes: 1 PM to 4 PM)**

Practical Classes will be after lunch : from 1 PM to 4 PM

Students must be present in the hospital for practicals.

**During first year, they should be there only as "observers" in practical classes.**

(Observer ship for route of vaccine administration and care)

**Following subjects must be taught; though there will not be any exam from these-**

1. Basic English.
2. Basic Computer Skills.
3. Soft Skills like – Interpersonal relationship skills and moral education.

**Outline of Curriculum  
of  
Diploma in B.C.G. Technician Course**

**SECOND YEAR**

**Theory (Classes : 9 AM to 12 PM)**

**First Paper : Syllabus Covers**

1. Basic of relevant pathology.
2. Bacteria.
3. Immunization & its Hazard.

**Second Paper : Syllabus Covers**

1. National Programme and Policies on Control of Tuberculosis – Lab network, DTP, RNTCP, DOT's.
2. B.C.G. Vaccine.
3. Route of administration of Injection IV/IM/SC.
4. Tuberculosis – Diagnosis (Sputum examination, Tuberculin test and other tests), Management (Curative and Preventive) Drugs of Tuberculosis, Complication.
5. HIV and Tuberculosis coordination.

## **SECOND YEAR**

### **Practical (Classes : 1 PM to 4 PM)**

Practical : Exams syllabus should cover –

- Training on Hand Wash/Scrubbing & sterilization practices.
- Assisting in storage of vaccine.
- Handling of vaccine.
- Hands on training of biomedical waste management.
- Hands on training of Sputum collection and assisting in Lab work.



# **ELIGIBILITY CRITERIA FOR ADMISSION AND DURATION OF THE COURSE**

## **COURSE DURATION :-**

- It is 2 years, full time Diploma Course.

## **ELIGIBILITY :-**

- Candidate must have passes 12<sup>th</sup> with physics, chemistry, biology  
or  
Physics, chemistry, maths  
with 35% marks in intermediate exams  
(From UP board any other recognised board)

## **AGE :-**

- Candidate must have completed age of 17 years of age as on 31<sup>st</sup> December of admission year. There is no maximum age limit for the admission.

# PATTERN OF EXAMINATION

## FIRST YEAR

<b>Paper</b>	<b>Subject</b>	<b>Marks</b>	<b>Internal Assessment Marks</b>	<b>Total Marks</b>	<b>Pass Marks</b>	<b>Duration of Exam</b>
<b><u>First Paper Theory</u></b>	<ul style="list-style-type: none"> <li>• Anatomy, Physiology</li> <li>• Basic of Biochemistry</li> </ul>	75	25	100	50	3 hours
<b><u>Second Paper Theory</u></b>	<ul style="list-style-type: none"> <li>• Tuberculosis- Demography, Epidemiology</li> <li>• Natural History of Tuberculosis</li> </ul>	75	25	100	50	3 hours
<b><u>Practical</u></b>		75	25	100	50	3 hours

# PATTERN OF EXAMINATION

## SECOND YEAR

<b>Paper</b>	<b>Subject</b>	<b>Marks</b>	<b>Internal Assessment Marks</b>	<b>Total Marks</b>	<b>Pass Marks</b>	<b>Duration of Exam</b>
<b><u>First Paper Theory</u></b>	<ul style="list-style-type: none"> <li>• Basic of relevant pathology.</li> <li>• Bacteria.</li> <li>• Immunization its Hazard.</li> </ul>	75	25	100	50	3 hours
<b><u>Second Paper Theory</u></b>	<ul style="list-style-type: none"> <li>• National programme &amp; Policies on control of Tuberculosis.</li> <li>• B.C.G. Vaccine</li> <li>• Route of administration of Injection.</li> <li>• Diagnosis, Management &amp; Complication of Tuberculosis</li> <li>• HIV &amp; Tuberculosis coordination.</li> </ul>	75	25	100	50	3 hours
<b><u>Practical</u></b>		75	25	100	50	3 hours

## **DETAIL OF COURSE**

(List of holidays, Total hours, Subject wise allotment of hours)

- **List of Holidays :-**

Sundays	- 52 days
Summer vacation	- 10 days
Winter vacation	- 10 days
Gazetted holidays	- 23 days
Preparatory holidays	- 10 days

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Total Holidays	- 105 days
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- **Total Hours :-**

Theory classes per day	- 3 Hours
Practical classes per day	- 3 Hours
Total hours per day	- 6 Hours
Total days & hours in One year (After deduction of holidays)	- 260 days or
	- 1560 Hours

# DETAIL OF COURSE

## DIPLOMA IN B.C.G. TECHNICIAN FIRST YEAR

### Subject wise allotment of hours

#### **Theory (780 Hours) Practical (780 Hours)**

<b><u>First paper theory</u></b>	1. Anatomy, Physiology (Cytology, Histology, Osteology and only basics of all organ systems of body)	350 Hrs.
	2. Basic of Biochemistry	125 Hrs.
<b><u>Second paper theory</u></b>	1. Tuberculosis – Definition, Incubation Period, Etiology, Pathogenesis, Clinical feature.	110 Hrs.
	2. Demography & Epidemiology of Tuberculosis : Problem Statement – India, World.	150 Hrs.
	3. Natural History of Tuberculosis.	45 Hrs.
<b><u>Third paper practical</u></b>	As described in curriculum	780 Hrs.
<b><u>Theory other subjects</u></b> (these subjects <b><u>must be taught ; though there will not be any exam from these</u></b> )	1. Basic Computer Skills	30 Hrs.
	2. Basic English	30 Hrs.
	3. Soft skills like – Interpersonal relationship skills and moral education.	10 Hrs.

# **DETAIL OF COURSE**

## **DIPLOMA IN B.C.G. TECHNICIAN SECOND YEAR**

### **Subject wise allotment of hours**

### **SECOND YEAR**

**Theory (780 Hours) Practical (780 Hours)**

<b>First paper theory</b>	1. Basic of relevant pathology.	150 Hrs.
	2. Bacteria.	30 Hrs.
	3. Immunization & its Hazard.	150 Hrs.
<b>Second paper theory</b>	1. National Programme and Policies on Control of Tuberculosis – Lab network, DTP, RNTCP, DOT's.	100 Hrs.
	2. B.C.G. Vaccine.	60 Hrs.
	3. Route of administration of Injection IV/IM/SC.	60 Hrs.
	4. Tuberculosis – Diagnosis (Sputum examination, Tuberculin test and other tests), Management (Curative and Preventive) Drugs of Tuberculosis, Complication.	200 Hrs.
	5. HIV and Tuberculosis coordination.	30 Hrs.
<b>Third paper practical</b>	As described in curriculum	780 Hrs.

# Details of Curriculum for DIPLOMA IN B.C.G. TECHNICIAN - FIRST YEAR

## Subject wise allotment of hours

<b>PAPER 1<sup>st</sup> Theory</b>	<b>Topics</b>	<b>Hours</b>
<b>General Anatomy, Physiology (Cytology, Histology, Osteology &amp; Basic of all organ system</b>	1. General orientation about part of human body, various term used in anatomy total numbers of bone their name and location. Basic idea about organisation of body from cell to organ system.	10 Hrs.
	2. Structure of animal cell, cell organ cells their function.	06 Hrs.
	3. Human tissue, type, structure, infection.	10 Hrs.
	4. Osteology – Name, location, identification & basic detail of all bones.	20 Hrs.
	5. Joint – Definition, type, basic structure & example.	10 Hrs.
	6. Skin & appendages.	06 Hrs.
	7. GIT – Location, Gross structure various parts & their function. Detail of process of food ingestion, digestion, absorption & defecation (Microscopic structure not required)	30 Hrs.
	8. Respiration tract – Location, Gross structure various parts & their function detail of breathing mechanism different respiratory volume.	30 Hrs.
	9. Urinary Tract – Location, Gross structure, various parts & their function, process of urine formation & voiding.	25 Hrs.
	10. Male Reproductive System – Only gross structure & function of different part.	15 Hrs.
	11. Female reproductive system – Only gross structure & function of different part, menstrual cycle (Microscopic structure not required)	15 Hrs.
	12. Endocrine system – Hormones secreted by pituitary, thyroid, parathyroid, pancreas, adrenal cortex, adrenal medulla, gonads & function of different hormones.	28 Hrs.
	13. Gross structure of brain & spinal cord, function of different part of brain & spinal cord.	30 Hrs.
	14. Blood – definition, composition & function detail about plasma, RBCs, WBCs, Platelets, Clotting system.	30 Hrs.
	15. Gross structure & function of sensory organs Eye, Ear, Nose, Tongue (Detail not required).	20 Hrs.
	16. Basic structure of heart, vessels open in to heart & leaving the heart arterial and venous tree of body.	20 Hrs.
	17. Lymphatic system – Structure & function.	15 Hrs.
	18. Immune system – Components various mechanism of defense.	30 Hrs.

**Details of Curriculum  
for  
DIPLOMA IN B.C.G. TECHNICIAN - FIRST YEAR**

<b>PAPER 1<sup>st</sup> Theory</b>	<b>Topics</b>	<b>Hours</b>
<b>Basic of Biochemistry</b>	1. Introduction of Biochemistry.	10 Hrs.
	2. Fat.	20 Hrs.
	3. Protein.	20 Hrs.
	4. Carbohydrate	20 Hrs.
	5. Enzyme.	15 Hrs.
	6. Minerals.	20 Hrs.
	7. Vitamins	20 Hrs.



**Details of Curriculum  
for  
DIPLOMA IN B.C.G. TECHNICIAN - FIRST YEAR**

<b>PAPER 2<sup>nd</sup> Theory</b>	<b>Topics</b>	<b>Hours</b>
<b>Tuberculosis</b>	1. Definition (Introduction of disease).	16 Hrs.
	2. Incubation Period.	04 Hrs.
	3. Etiology.	15 Hrs.
	4. Pathogenesis.	15 Hrs.
	5. Clinical feature.	60 Hrs.

**Details of Curriculum  
for  
DIPLOMA IN B.C.G. TECHNICIAN - FIRST YEAR**

<b>PAPER 2<sup>nd</sup> Theory</b>	<b>Topics</b>	<b>Hours</b>
<b>Demography &amp; Epidemiology of Tuberculosis</b>	1. Demography and Epidemiology of Tuberculosis	65 Hrs.
	2. Problem Statement – India, World.	45 Hrs.
	3. Epidemiological Indices of Tuberculosis.	40 Hrs.

**Details of Curriculum  
for  
DIPLOMA IN B.C.G. TECHNICIAN - FIRST YEAR**

<b>PAPER 2<sup>nd</sup> Theory</b>	<b>Topics</b>	<b>Hours</b>
<b>Natural History of tuberculosis</b>	1. Natural History of tuberculosis.	45 Hrs.

# Curriculum for Practical Diploma in B.C.G. Technician - First Year

<b>Practical</b>	1. Anatomy of Skeleton and Anatomical identification of bones.
	2. Anatomical facts of different organ system of body through model, chart and specimen.
	3. Urine examination.
	4. Estimation of hemoglobin.
	5. Slide making of blood smear.
	6. Measurement of Blood Pressure, Pulse, Respiratory Rate.
	7. Measurement of fever.

## Details of Curriculum for DIPLOMA IN B.C.G. TECHNICIAN - SECOND YEAR

### Subject wise allotment of hours

<b>PAPER 1<sup>st</sup> Theory</b>	<b>Topics</b>	<b>Hours</b>
<b>Basic of relevant pathology</b>	1. Inflammation – Definition, Cardinal sign., Basic steps of Acute & chronic inflammation.	25 Hrs.
	2. Basic of shock.	10 Hrs.
	3. Basic of disorder of immune system.	25 Hrs.
	4. Mode of disease transmission and prevention of infection.	50 Hrs.
	5. Sterilization and method of sterilization in hospital.	40 Hrs.

**Details of Curriculum  
for  
DIPLOMA IN B.C.G. TECHNICIAN - SECOND YEAR**

<b>PAPER 1<sup>st</sup> Theory</b>	<b>Topics</b>	<b>Hours</b>
<b>Bacteria</b>	1. Introduction (Bacteria, Virus and Fungi)	10 Hrs.
	2. Bacterial cell.	06 Hrs.
	3. Classification of bacteria.	14 Hrs.

**for**  
**DIPLOMA IN B.C.G. TECHNICIAN - SECOND YEAR**

**Subject wise allotment of hours**

<b>PAPER 1<sup>st</sup> Theory</b>	<b>Topics</b>	<b>Hours</b>
<b>Immunization &amp; its Hazard</b>	1. Immunization.	50 Hrs.
	2. Immunization schedule.	30 Hrs.
	3. Routes of vaccine administration.	20 Hrs.
	4. Immunization Hazard.	50 Hrs.

## Details of Curriculum for DIPLOMA IN B.C.G. TECHNICIAN - SECOND YEAR

### Subject wise allotment of hours

PAPER 2 <sup>nd</sup> Theory	Topics	Hours
<b>National Program &amp; Policies</b>	1. National Programme & Policies on Tuberculosis control.	20 Hrs.
	2. DTP.	20 Hrs.
	3. RNTCP.	20 Hrs.
	4. DOTs.	30 Hrs.
	5. Lab Network	10 Hrs.



**Details of Curriculum  
for  
DIPLOMA IN B.C.G. TECHNICIAN - SECOND YEAR**

**Subject wise allotment of hours**

<b>PAPER 2<sup>nd</sup> Theory</b>	<b>Topics</b>	<b>Hours</b>
<b>B.C.G. Vaccine</b>	1. Introduction (B.C.G. Vaccine)	10 Hrs.
	2. Storage of B.C.G. Vaccine.	10 Hrs.
	3. Handling.	10 Hrs.
	4. Mode of Administration of B.C.G. Vaccine.	30 Hrs.

## Details of Curriculum for DIPLOMA IN B.C.G. TECHNICIAN - SECOND YEAR

### Subject wise allotment of hours

PAPER 2 <sup>nd</sup> Theory	Topics	Hours
<b>Route of administration of injection</b>	1. Intramuscular Route of Injection.	20 Hrs.
	2. Intravenous Route of Injection.	20 Hrs.
	3. Subcutaneous Route of Injection.	20 Hrs.

## Details of Curriculum for DIPLOMA IN B.C.G. TECHNICIAN - SECOND YEAR

### Subject wise allotment of hours

PAPER 2 <sup>nd</sup> Theory	Topics	Hours
<b>Tuberculosis</b>	1. Diagnosis of Tuberculosis : Sputum examination, Tuberculin test, Radiological examination.	50 Hrs.
	2. Management of tuberculosis : Preventive, Curanture.	50 Hrs.
	3. Prognosis & complication of tuberculosis : Pulmonary tuberculosis, Pleural effusion, Abdominal tuberculosis, Tubercular meningitis, MDR, Tubercular pericarditis, Tubercular sclerosis, Necrosis, Bone & Joint Tuberculosis, Skin Tuberculosis.	100 Hrs.
	4. HIV & Tuberculosis coordination.	30 Hrs.

**Details of Curriculum  
for  
DIPLOMA IN B.C.G. TECHNICIAN - SECOND YEAR**

**Subject wise allotment of hours**

<b>PAPER 2<sup>nd</sup> Theory</b>	<b>Topics</b>	<b>Hours</b>
<b>HIV &amp; Tuberculosis coordination</b>	1. HIV & Tuberculosis coordination.	30 Hrs.

**Curriculum  
for  
Practical**

## Diploma in B.C.G. Technician - Second Year

<b>Practical</b>	1. Training on hand wash/scrubbing.
	2. Storage of vaccine.
	3. Handling of vaccine.
	4. Handling of Biomedical waste.
	5. Hands on training of sputum collection & assisting in lab work.

## Reference Books for DIPLOMA IN B.C.G. TECHNICIAN

<b>S.No.</b>	<b>Name of the book</b>	<b>Author</b>	<b>Publisher</b>
1.	A Hand Book of General Human Anatomy	B.D. Chaurasia	C.B.S. Publisher
2.	Human Anatomy (Vol. - I, II, III)	B.D. Chaurasia	C.B.S. Publisher
3.	Human Anatomy & Physiology	S. Chaudhary, A. Chaudhary	Pee Vee Publisher
4.	Practical Human Anatomy & Physiology	Shraddha R. Kale, Rajendra R. Kale	Nirali Prakashan
5.	Hand Book of Human Physiology	Dr. Vidyaratan	Jaypee Brothers
6.	Human Physiology (Vol. – I & II)	Dr. C.C. Chatterjee	Medical Allied Agency
7.	A Text Book of Biochemistry	S.S. Randhawa	Pee Vee Publisher
8.	Biochemistry & Clinical Pathology	M.R. Chaudhary, S.B. Gokhle	
9.	A Text Book of Pathology	Harsh Mohan	Jay Pee Brothers
10.	A Text Book of Microbiology	Dr. PHBS Sharma	Pee Vee Publisher
11.	Park's Text Book of Preventive & Social Medicine	K. Park	Banarsi Das Bhanot
12.	Medicine for Students	ASPI F Golwalla	A.F. Golwalla (National Book Depot)
13.	Savill's System of Clinical Medicine	e c Warner	CBS Publisher
14.	Davidson's Principles & Practice of Medicine	Nicholas A Boom, Nicki R Colledge, Brain R Walker	Churchil Livingstone
15.	Fundamental of Computer	V. Rajaraman	Prentice Hall of India Pvt. Ltd.
16.	Remedial Study of English	Raman Chaddha	Lotus Publisher
17.	Medical Dictionary	-	-