



NAAC RE-ACCREDITED WITH 'A' GRADE

# **Sevalal Mahila Mahavidyalaya**

**Place for Higher Learning & Research (Research Academy)**

**Sakkardara Square, Umrer Road, Nagpur-440 024**

**E-mail : sevamahilamv@gmail.com**

**Website: www.sevalalmahilamahavidyalaya.ac.in**

## **Report of Certificate Course in 'Clinical Microbiology'**

**Course Coordinator**

**Dr. (Mrs). Seema R. Nimbarte**

**Associate Professor**

**Department of Microbiology**

**Academic Session: 2023-2024**

**Off. Principal**  
**Sevalal Mahila Mahavidyalaya**  
**Nagpur.**



## Course Title: Clinical Microbiology

### About the Course:

Clinical Microbiology courses teach students about the biology and transmission of pathogens, as well as how to diagnose, treat, and prevent infectious diseases. The program is designed to create expertise in laboratory diagnosis of human diseases caused by bacteria, viruses, fungi, and parasites.

The course is designed to impart students' theoretical and practical knowledge of Bacteriology, Mycology, Virology and Parasitology.

### Course Outline:

The course includes Historical development in Bacteriology, Classification of Pathogenic bacteria (outline), General methods of isolation and identification of pathogenic bacteria. Study of infections associated with various bacteria, fungi, viruses and protozoans.

Students will learn to collect, preserve and process blood, stool, urine, semen and CSF.

### Course Outcome:

The students will be able to learn and understand :

1. Essential facts, concepts, principles and theories relating to subject areas.
2. Pathogenicity and laboratory diagnosis of various bacterial, fungal, viral and parasitic infections.
3. Microbiological examination of urine culture, blood culture, sputum, CSF and stool.
4. Different methods of isolating pure culture of the infectious microorganisms.
5. Antimicrobial susceptibility testing.
6. Students will be able to work as technician in Microbiology laboratory.
7. Students will also be able to work as laboratory technician in different pathologies and multi-speciality hospitals.
8. The students will develop ability to communicate effectively in both oral and written contexts in the form of technical papers, project reports, design documents and seminar presentations.



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Sakkardara Square, Umrer Road, Nagpur-440024

Date : 08/01/2024

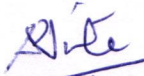
## NOTICE

All the members of the Department of Microbiology are hereby informed that the meeting regarding the discussion of starting the Certificate Course in the Department will be held on 10-01-2024 at 12.30 pm. in the chamber of Hon'ble Principal. All the members are requested to remain present for the meeting.

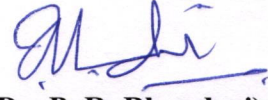
Hon'ble Principal will chair the meeting in presence of Dr. A. P. Lambat, NAAC Coordinator.

### Agenda of the meeting:

- 1) To start Certificate course in Microbiology.
- 2) To discuss regarding theme/title of the course, date of commencement and framing the syllabus.
- 3) Any other matter with the permission of the Chair.



**(Dr. Mrs. S. R. Nimbarte)**  
Assistant Professor,  
Department of Microbiology  
Sevadal Mahila Mahavidyalaya,  
Nagpur



**(Dr. P. R. Bhandari)**  
Head,  
Department of Microbiology  
Sevadal Mahila Mahavidyalaya,  
Nagpur

### Copy to:

Dr. A. P. Lambat, NAAC Coordinator



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## **Minutes of the Meeting**

### **Certificate Course**

The meeting regarding starting the certificate course was held on 10-01-2024 at 12.30 pm. in the chamber of Hon'ble Principal. Hon'ble Principal presided over the meeting.

#### **Agenda of the Meeting:**

- 1) To start Certificate Course in Microbiology.
- 2) To discuss regarding theme/title of the course, date of commencement and framing the course syllabus.
- 3) Any other matter with the permission of the Chair.

Following Members were present.

- |                            |   |                                     |
|----------------------------|---|-------------------------------------|
| 1) Prof. Pravin Charde     | - | Principal- Chairman                 |
| 2) Dr. A. P. Lambat        | - | NAAC Coordinator                    |
| 3) Dr. P. R. Bhandari      | - | Head, Dept. of Microbiology, Member |
| 4) Dr. Mrs. Seema Nimbarte | - | Course Coordinator                  |
| 5) Dr. (Mrs.) K. V. Dubey  | - | Member                              |

Dr. (Mrs). Seema Nimbarte, Course Coordinator acted as secretary in the meeting. The Coordinator welcomed the Chairperson, Hon'ble Principal and other members and called the meeting in order with the permission of Chairperson. The Coordinator read out the agenda of the meeting and subsequently discussed the matter.

**Item No. 1: To start Certificate course in Microbiology.**

**Resolution:** It was unanimously decided to start new Certificate Course in the Department of Microbiology under the Co-ordinatorship of Dr. Seema Nimbarte.



*Seema*

**Off. Principal**  
Sevadal Mahila Mahavidyalaya  
Nagpur.


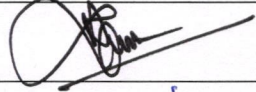
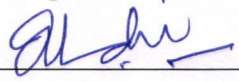
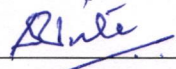
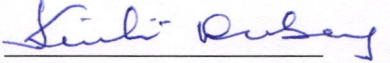


**Item No. 2: To discuss regarding theme/title of the course, date of commencement and framing the course syllabus.**

**Resolution:** Unanimously it was decided to commence the Certificate Course in "Clinical Microbiology" in the Department of Microbiology from February 2024 for the session 2023-24. It was further decided that the Syllabus of the course will be designed by Dr. Seema Nimbarte, who will be the Course Coordinator.

**Item No. 3: Any other matter with the permission of Chair.**

**Resolution:** As there was no other matter for further discussion the meeting ended with vote of thanks.

	Name	Signature
1.	Hon'ble Prof. Pravin Charde	
2.	Dr. A. P. Lambat	
3.	Dr. P. R. Bhandari	
4.	Dr. (Mrs.) S. R. Nimbarte	
5.	Dr.(Mrs.) K.V.Dubey	



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Date : 10/01/2024

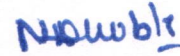
## **NOTICE**

All the students of the B.Sc. Microbiology are hereby informed that a Certificate Course in "Clinical Microbiology" is started by the Department of Microbiology of the college from the Session 2023-2024. The course is commencing from 1<sup>st</sup> February 2024.

Interested students can register their names with Dr. (Mrs). S. R. Nimbarte.



**Prof. Pravin Charde**  
Principal  
Sevadal Mahila Mahavidyalaya  
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Date : 04.04.2024

## **NOTICE**

All the Members of the Department of Microbiology are hereby informed that the second meeting of the session regarding the Certificate Course in "Clinical Microbiology" will be held on 06-04-2024 at 12.30 pm in Hon'ble Principal's Chamber. All the members are requested to remain presents for the meeting.

Hon'ble Principal will chair the meeting in presence of Dr. A.P. Lambat, NAAC Coordinator.

### **Agenda of the meeting:**

- 1) To confirm the minutes of last meeting.
- 2) To discuss about the progress of Certificate Course in "Clinical Microbiology" and its examination schedule.
- 3) Any other matter with the permission of the Chair.

**(Dr. Mrs. S. R. Nimbarte)**

Course Coordinator  
Department of Microbiology  
Sevadal Mahila Mahavidyalaya,  
Nagpur

**(Dr. P. R. Bhandari)**

Head,  
Department of Microbiology  
Sevadal Mahila Mahavidyalaya,  
Nagpur

**Copy to:**

Dr. A. P. Lambat, NAAC Coordinator



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## Minutes of the Meeting

### Certificate Course in "Clinical Microbiology"

The meeting regarding the Certificate Course in "Clinical Microbiology" will be held on 06-04-2024 at 12.30 pm in the Hon'ble Principal's Chamber. Hon'ble Principal presided over the meeting.

#### Agenda of the Meeting:

1. To confirm the minutes of last meeting.
2. To discuss about the progress of Certificate Course in "Clinical Microbiology" and its examination schedule.
3. Any other matter with the permission of the Chair.

Following Members were present.

- |    |                           |   |                                      |
|----|---------------------------|---|--------------------------------------|
| 1. | Prof. (Mrs.) N. S. Dhoble | - | Principal-Chairman                   |
| 2. | Dr. A. P. Lambat          | - | NAAC Coordinator                     |
| 3. | Dr. P. R. Bhandari        | - | Head, Dept. of Microbiology & Member |
| 4. | Dr.(Mrs.) S. R. Nimbarte  | - | Course Coordinator                   |
| 5. | Dr.(Mrs.) K. V. Dubey     | - | Member                               |

Mrs. Seema Nimbarte, Course Coordinator acted as secretary in the meeting. The Coordinator welcomed the Chairperson, Hon'ble Principal and other members and called the meeting in order with the permission of chairperson. The Coordinator read out the agenda of the meeting and discussed the points according to the agenda of the meeting.

**Item No. 1: To confirm the minutes of last meeting.**

**Resolution:** The minutes of the last meeting held on 10/01/2024 were read by the course coordinator and after thorough discussion the minutes were unanimously approved.



*M. Dhoble*

**Off. Principal**  
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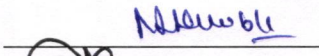
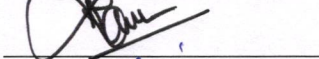
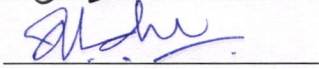
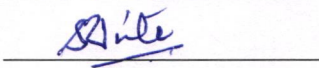
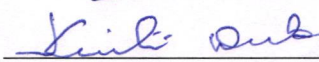
**Item No. 2: To discuss about the progress of Certificate course in 'Clinical Microbiology and examination schedule.**

**Resolution:** Course Coordinator informed about the progress of the course and the percentage of course completed and also that the exams will be conducted in the last week of the month. It was approved unanimously.

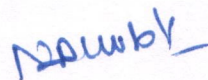
**Item No. 3: Any other matter with the permission of Chair.**

**Resolution:** Hon'ble Principal instructed to conduct the examination and get the certificates duly signed and distribute the certificates to the students after successful completion of the course.

There was no other matter for further discussion so the meeting ended with vote of thanks.

Name	Signature
1. Prof. (Mrs.) N. S. Dhoble	
2. Dr. A. P. Lambat	
3. Dr. P. R. Bhandari	
4. Dr. (Mrs.) S. R. Nimbarte	
5. Dr. (Mrs.) K. V. Dubey	



  
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## Theory Syllabus

Syllabus: (Total 50 hrs including Teaching, Lab, and Field visits)

### Unit I - Clinical Bacteriology

Historical development in Bacteriology, Classification of Pathogenic bacteria (outline), General methods of isolation and identification of pathogenic bacteria. Study of infections associated with following Gram-positive bacteria – *Clostridium*, *Pneumococcus*, *Corynebacterium*, *Streptococci*, *Staphylococci*.

Study of infections associated with following Gram-negative bacteria — *Salmonella*, *Klebsiella*, *Proteus*, and *Escherichia*. *Vibrio*, *Pseudomonas*, *Neisseria*.

Study of infections associated with Mycoplasma, *Mycobacterium tuberculosis* and *Mycobacterium leprae*.

### Unit II - Clinical Mycology and Virology

Classification of Medically important fungi. General identification process of medically important fungi. Study of superficial fungal infections (Trichophyton mycoses). Classification of animal viruses. Isolation, identification, and cultivation of animal viruses. Study of DNA viruses- Poxvirus, Herpes virus, Adeno virus, Hepatitis B virus.

Study of RNA viruses – Retrovirus, Picorna virus, Paramyxo virus.

### Unit III - Clinical Parasitology

Classification and Brief history of Protozoa and helminthic infections – mechanism of disease production by parasites. Etiology, Pathogenesis, Clinical diagnosis of following protozoans – *Entamoeba histolytica*, *Leishmania*, and *Plasmodium* Etiology, Pathogenesis, Clinical diagnosis of following nematodes – *Ascaris lumbricoides* and *Wucheriabancofti*.

### Unit IV - Clinical Pathology

Composition of urine, Microbiological examination of urine, clinical significance of urine analysis.

Composition of CSF, Microbiological examination of CSF, clinical significance of CSF analysis.

Composition of Semen, Microbiological examination of semen, clinical significance of semen analysis.

Composition of sputum, Microbiological examination of sputum, clinical significance of sputum analysis.

Microbial examination of blood (Blood culture). Routine stool analysis.



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**Practical syllabus:**

1. Streak plate and pour plate method for isolation of pure culture of bacteria.
2. Gram staining.
3. Acid fast staining (for detection of Mycobacteria in sputum).
4. Microbiological examination of urine & antibiotic susceptibility testing.
5. Microbiological examination of pus.
6. Microbiological examination of CSF and Semen.
7. Microbiological examination of blood & antibiotic susceptibility testing.
8. Microscopic examination of stool.
9. Detection of malarial parasite
10. Detection of viral infection – HIV, Hepatitis.

**Teaching Methodologies**

- The course will be taught through both teaching of theory and Practical classes using chalk board, power point presentation mode as per the requirement of the syllabus.
- Lecture hours: 30 Hour
- Practical hours: 20 Hour
- Guest Lecture/ Seminar/ Workshop/ Field visit: 10 Hour
- Exam pattern: Offline: Theory -03 Hour and Practical Examination- 06 Hour
- Attendance: 75 % of attendance is compulsory

**Proposed Guest Lectures and Workshops:****(10 Hour)**

Guest lectures by eminent scientists, clinicians and teachers working in the field of Clinical Microbiology and experts will be invited for hands on training of laboratory diagnosis and identification of infectious agents causing bacterial, fungal, viral and parasitic infections.

- Visit to hospitals, pathology laboratories and Diagnostic centres.
- Submission of field work report in the prescribed format by the students.
- Suggested format for field work book; Title page, student details, content page, introduction, work done, findings, conclusion and acknowledgments.

**Assessment and Evaluation Methods:**

Internal Assignments through seminars /group discussion on bio fertilizers and biopesticides.  
(20 Marks)

Question Paper Pattern: Theory paper setting will be as per RTM Nagpur University pattern.

Max. Marks: 50 of three hours duration.

Practical Examination will be of Max. 30 marks, containing:

One long experiment - 10 marks

Two short experiments - 5 marks each

Practical Record -05

Viva-voce-05



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**Learning outcomes:**

On successful completion of the practical course, student shall be able to perform

1. Pathogenicity and laboratory diagnosis of various bacterial, fungal, viral and parasitic infections.
2. Microbiological examination of urine culture, blood culture, sputum, CSF and stool.
3. Different methods of isolating pure culture of the infectious microorganisms.
4. Antimicrobial susceptibility testing.
5. Students will be able to work as technician in microbiology laboratory.
6. Students will also be able to work as laboratory technician in different pathologies and multi-speciality hospitals.



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## Department of Microbiology Certificate Course in "Clinical Microbiology"

Academic session 2023-24

### List of Students Enrolled in the Certificate Course

Sr. No.	Name of the Students
1	Aastha Pramod Karme
2	Divya Naresh Deokar
3	Gajiya Firdoj Jakir Sheikh
4	Harshada Shrikant Adgulkar
5	Janhavi Janardhan Paunikar
6	Janhavi Manojrao Khobragade
7	Kartiki Dhiraj Chavhan
8	Komal Raju Feddewar
9	Mehroze Ismail Qureshi
10	Muskan Alfiya Iqbal Khan
11	Palak Sandeep Jaiswal
12	Poonam Revnath Koparkar
13	Ragini Prabhakar Rehpade
14	Sakshi Prakash Dhomne
15	Saniya Virendra Admane
16	Sarvadhnya Satish Mendhekar
17	Sayali Kamlakar Rajurkar
18	Sayali Rajendra Gulhane
19	Shifa Saher S. Ahmed Sheikh
20	Shrutika BandujiMulkure
21	Suhani Girishchandra Bhure
22	Tanushree Akash Mohadikar
23	Vaishnavi Ajay Lutade
24	Yashashree Sheshrao Bhoyar



*N. N. N.*  
Off. Principal  
Sevadal Mahila Mahavidyalaya  
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*Seema R. Nimbarte*  
Dr. (Mrs). Seema R. Nimbarte  
Associate Professor  
Department of Microbiology











**Sevadal Mahila Mahavidyalaya, Nagpur**  
**Department of Microbiology**

**Certificate Course in "Clinical Microbiology"**  
**Academic session 2023-24**

**Theory Examination Summer 2024**

**Time: Three Hours**

**Maximum Marks: 50**

**N. B.:-** (1) All questions are compulsory and carry equal marks  
(2) Illustrate your answers with suitable diagram

- Q. 1.** Explain the methods of isolation and identification of *Salmonella*, *Klebsiella*, and *Proteus* (10)
- OR**
- Describe the pathogenicity of *Mycobacterium tuberculosis* and *E.coli*. (10)
- Q.2.** Describe characteristic features of pox virus and Herpes virus. (10)
- OR**
- Discuss the classification and identification of medically important fungi (10)
- Q. 3.** Describe the etiology, pathogenesis & diagnosis of *Entamoeba histolytica* (10)
- OR**
- Describe the etiology, pathogenesis & diagnosis of *Ascaris*. (10)
- Q.4.** a) Describe microbial examination of urine. (05)  
b) Write a note on composition and microbial analysis of semen. (05)
- OR**
- c) Describe microbial examination of stool (05)  
d) What is the importance of CSF analysis? How is it carried out? (05)
- Q. 5. Write short notes on:**
- a) Classification of Pathogenic bacteria (outline). (2½)  
b) Classification of infectious fungi. (2½)  
c) Leishmaniasis. (2½)  
d) Composition of CSF (2½)



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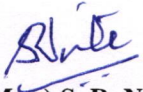
### Department of Microbiology Certificate Course in "Clinical Microbiology" Academic Session 2023-24

#### Performance of Students Enrolled in the Certificate Course

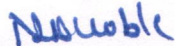
Sr. No.	Name of the student	Theory Marks out of 50	Practical Marks out of 30	Internal Assessment Marks out of 20 (Seminar Exam)
1	Aastha Pramod Karme	36	25	17
2	Divya Naresh Deokar	40	25	18
3	Gajiya Firdoj Jakir Sheikh	40	27	18
4	Harshada Shrikant Adgulkar	36	25	17
5	Janhavi Janardhan Paunikar	37	26	18
6	Janhavi Manojrao Khobragade	38	26	18
7	Kartiki Dhiraj Chavhan	40	26	18
8	Komal Raju Feddewar	41	25	16
9	Mehroze Ismail Qureshi	38	26	18
10	Muskan Alfiya Iqbal Khan	40	25	17
11	Palak Sandeep Jaiswal	41	25	17
12	Poonam Revnath Koparkar	40	25	17
13	Ragini Prabhakar Rehpade	40	26	17
14	Sakshi Prakash Dhomne	39	25	17
15	Saniya Virendra Admane	39	26	17
16	Sarvadhnya Satish Mendhekar	40	25	17
17	Sayali Kamlakar Rajurkar	43	28	19
18	Sayali Rajendra Gulhane	40	28	19
19	Shifa Saher S. Ahmed Sheikh	42	28	19
20	Shrutika Banduji Mutkure	40	28	19
21	Suhani Girishchandra Bhure	40	28	19
22	Tanushree Akash Mohadikar	42	28	19
23	Vaishnavi Ajay Lutade	44	27	19
24	Yashashree Sheshrao Bhojar	40	28	19


#### Result Analysis:

Pass percentage of the students who successfully completed the certificate course = 100%  
Certificates were provided to all the successful students.

  
Dr. (Mrs.) S. R. Nimbarte  
Course Coordinator



  
Prof. (Mrs.) N.S. Dhoble  
Off. Principal  
Sevadal Mahila Mahavidyalaya,  
Nagpur

  
Off. Principal  
Sevadal Mahila Mahavidyalaya  
Nagpur.



Sample Copy of the Certificate issued to the successful students of the Certificate Course in 'Clinical Microbiology'.



*S. R. Nimbarde*



*N. S. Dhole*

**Off. Principal**  
Sevalal Mahila Mahavidyalaya  
Nagpur.