

**SREE NARAYANA COLLEGE**

**DEPARTMENT OF BIOTECHNOLOGY**

**DEPT. -LEVEL CERTIFICATE COURSE (2019 - 20)**

**MICROBIAL TECHNIQUES**

**Course Duration: 30 hours**

# SYLLABUS

[ Total hours :30 ]

## MICROBIAL TECHNIQUES

Course hours:30

### THEORY (18 Hrs)

#### Module I

6 hrs

Scope and history of microbiology, Good Laboratory Practices (GLP), Good Laboratory Practices for Students, Microbial cell structure- Eukaryotic and prokaryotic cells, Gram positive and Gram negative bacteria, Structure of a bacteria (6HRS)

#### Module II 2hrs

Sterilization-concept of sterilization, methods of sterilization -dry heat, wet heat or steam, radiation, chemical and filtration.

#### Module III

4hrs

Culture media- types and uses, Bacterial Growth curve, factors affecting growth of microbes. Pure culture Methods: Direct plating, Serial dilution technique, Spread plate, streak plate, pour plate; slant culture and stab culture

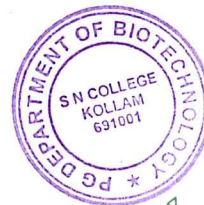
### PRACTICALS (18 hrs)

- Staining of bacteria-Simple staining, Gram staining, Acid fast staining, Negative staining (5hrs)
- Pure culture methods (5 hrs)
- Sterilization (4hrs)
- Media preparation (4hrs)

### Suggested Readings

1. Prescott's Microbiology by Joanne Willey, Kathleen Sandman and Dorothy Wood.
2. Microbiology- Laboratory, theory and application by Michael J. Laboffe.
3. Microbiology- a systems approach by Marjorie Kelly Cowan

  
**GREESHMA.P**  
Assistant Professor  
Department Of Biotechnology  
Sree Narayana College, Kollam-691001



  
Principal  
Sree Narayana College  
Kollam



**SREE NARAYANA COLLEGE**  
**DEPARTMENT OF BIOTECHNOLOGY**

**DEPT. -LEVEL CERTIFICATE COURSE (2019- 20)**

**MICROBIAL TECHNIQUES**

**Aim of the course**

Aim of this course is to train students on the basic techniques of microbiology.

- **Relevance of the course**
- Microorganisms are extremely important in our everyday lives. Some are responsible for a significant proportion of the diseases affecting not only humans, but also plants and animals, while others are vitally important in the maintenance and modification of our environment. Still others play an essential role in industry, where their unique properties have been harnessed in the production of food, beverages and antibiotics. Scientists also have learned how to exploit microorganisms in the field of molecular biology, which makes an enormous impact both industrially and medically. Thus, the science of microbiology aims to gain and expand our fundamental understanding of microorganisms by studying their morphology, metabolism, physiology, reproduction and genetics. This is all how microbiology plays a significant role in the different sector.

**Objectives and expected outcome**

- The course gives an idea for the maintenance of laboratory and the practices that should be accomplished in a laboratory.
- The course explains the isolation and screening techniques of microbes from different samples.

**Expected Outcome**

On completion of the course candidates will achieve the following objectives,

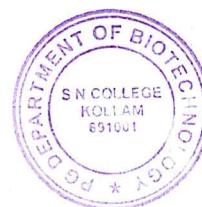
- A detailed knowledge of structure, function and application of microorganisms.
- Skills in handling microorganisms in the laboratory.
- An understanding of applications of microorganisms in the industry, health-care, environmental protection, food agriculture and research.

*Tharatharajil*  
Principal  
Sree Narayana College  
Kollam



*(Signature)*  
Assistant Professor  
Department Of Biotechnology  
Sree Narayana College, Kollam-691001





**SREE NARAYANA COLLEGE**  
**DEPARTMENT OF BIOTECHNOLOGY**

**DEPT. -LEVEL CERTIFICATE COURSE (2019- 20)**

**MICROBIAL TECHNIQUES**

**Notice**

It is to inform all concerned that a meeting of the members of Board of Studies in the College level certificate programme on Microbial Techniques is been organized by the department of Biotechnology and will be conducted on 7/01/2020 at 11 am.

**Agenda:**





- Finalise the syllabus
- Course timetable


  
**Greeshma P**

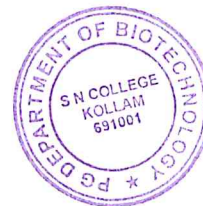
**Course Coordinator (Principal)**

  
**Dr. R Sunil Kumar**

**Members**

- |                           |   |                           |   |
|---------------------------|---|---------------------------|---|
| 1. Smt. NimiMuraleedharan | - | HOD & Assistant Professor |  |
| 2. Dr. Nitha Anand        | - | Govt. Guest Faculty       |  |
| 3. Dr. Sujith S           | - | Govt. Guest Faculty       |  |
| 4. Dr. Divya Balakrishnan | - | Govt. Guest Faculty       |  |

  
**GREESHMA.P**  
Assistant Professor  
Department Of Biotechnology  
Sree Narayana College, Kollam-691001



**SREE NARAYANA COLLEGE**  
**DEPARTMENT OF BIOTECHNOLOGY**

**DEPT. LEVEL CERTIFICATE COURSE (2019 - 20)**

**MICROBIAL TECHNIQUES**

**Notice**

It is to inform all concerned that a meeting of the members of Board of Studies in the College level certificate programme on Microbial techniques organized by the department of Biotechnology will be conducted on 11/03/2020 at 3 pm.

**Agenda:**

- Release of result
- Distribution of course certificate



**Smt. Greeshma P**






**Course Coordinator**



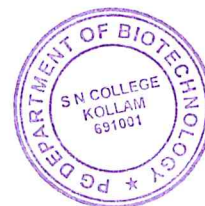
**Dr. R Sunil Kumar**

**Principal**

**Members**

- |                           |   |                           |   |
|---------------------------|---|---------------------------|---|
| 1. Smt. NimiMuraleedharan | - | HOD & Assistant Professor |  |
| 2. Smt. Greeshma P        | - | Assistant Professor       |  |
| 3. Dr. Nitha Anand        | - | Govt. Guest Faculty       |  |
| 4. Dr. Sujith S           | - | Govt. Guest Faculty       |  |
| 5. Dr. Divya Balakrishnan | - | Govt. Guest Faculty       |  |

  
**GREESHMA.P**  
Assistant Professor  
Department Of Biotechnology  
Sree Narayana College, Kollam-691001





**SREE NARAYANA COLLEGE**  
**DEPARTMENT OF BIOTECHNOLOGY**

**DEPT. -LEVEL CERTIFICATE COURSE (2019 -20)**

**MICROBIAL TECHNIQUES**

**Minutes**

A meeting of the members of the Board of Studies was conducted on 7/01/2020 at 11am. Applications were invited for a 30 hr Department Level Certificate course, organized by the Dept of Biotechnology. Dr. R Sunil Kumar (Principal) was the course director and Smt. Nimi Muraleedharan was the course coordinator. Dr Sujith S, Govt guest faculty, Dr. Nitha Anand, Govt. Guest Faculty and Dr. Divya Balakrishnan, Govt. Guest faculty Dr Prakash G Williams were the members of the committee. The syllabus and course timetable for the certificate course were finalized in the meeting.

The meeting ended by 12:30pm

**Dr. Dr. R Sunil Kumar (Principal)**

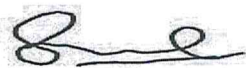
**Smt. Nimi Muraleedharan (HOD & Assistant Professor)**

**Smt. Greeshma P (Assistant Professor)**

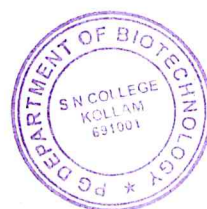
**Dr. Nitha Anand (Govt. Guest Faculty)**

**Dr. Sujith S (Govt. Guest Faculty)**

**Dr. Divya Balakrishnan (Govt. Guest Faculty)**



*Dr. R. Sunil Kumar*  
Principal  
Sree Narayana College  
Kollam



*Greeshma P*  
**GREESHMA.P**  
Assistant Professor  
Department Of Biotechnology  
Sree Narayana College, Kollam-691001

**SREE NARAYANA COLLEGE**  
**DEPARTMENT OF BIOTECHNOLOGY**  
**DEPT. -LEVEL CERTIFICATE COURSE (2019 - 20)**  
**MICROBIAL TECHNIQUES**

**Minutes**

A meeting of the members of the Board of Studies was conducted on 11/03/2020 at 3 pm. Applications were invited for a 30 hours Department Level Certificate course, organized by the Dept of Biotechnology. Dr. R Sunil Kumar (Principal) was the course director and Greeshma P was the course coordinator. Dr. Sujith S, Govt. guest faculty, Dr. Nitha Anand, Govt. Guest Faculty and Dr. Divya Balakrishnan Govt. Guest Faculty were the members of the committee. The results were announced and the certificates were distributed in the meeting.

The meeting ended by 4:30pm.

**Dr. R Sunil Kumar (Principal)**


**Smt. Nimi Muraleedharan (HOD & Assistant Professor)**

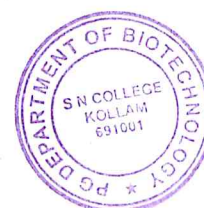
**Smt. Greeshma P (Assistant Professor)**

**Dr. Nitha Anand (Govt. Guest Faculty)**

**Dr. Sujith S (Govt. Guest Faculty)**

**Dr. Divya Balakrishnan (Govt. Guest Faculty)**

  
**GREESHMA.P**  
Assistant Professor  
Department Of Biotechnology  
Sree Narayana College, Kollam-691001






**SREE NARAYANA COLLEGE**  
**DEPARTMENT OF BIOTECHNOLOGY**

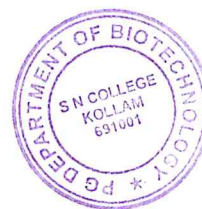
**DEPT. -LEVEL CERTIFICATE COURSE (2019 - 20)**

**MICROBIAL TECHNIQUES**

**List of Teachers handling Certificate course – Microbial Techniques**

- |                            |   |
|----------------------------|---|
| 1. Smt. Nimi Muraleedharan | - HOD & Asst Prof of Biotechnology, SNC Kollam. |
| 2. Smt. Greeshma P         | - Asst Prof of Biotechnology, SNC Kollam.       |
| 3. Dr. Sujith S            | - Govt. Guest Faculty                           |
| 4. Dr. Nitha Anand         | -Govt. Guest Faculty                            |
| 5. Dr. Divya Balakrishnan  | - Govt. Guest Faculty                           |

  
**GREESHMA.P**  
Assistant Professor  
Department Of Biotechnology  
Sree Narayana College, Kollam-691001



  
Principal  
Sree Narayana College  
Kollam



# SREE NARAYANA COLLEGE KOLLAM

## CERTIFICATE COURSE 2019-20

Department:

BIOTECHNOLOGY

Name of Certificate course:

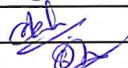

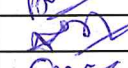

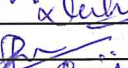
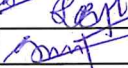
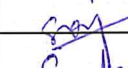

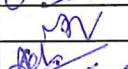
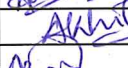
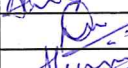
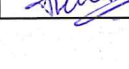








MICROBIAL TECHNIQUES

No. of students applied:

20

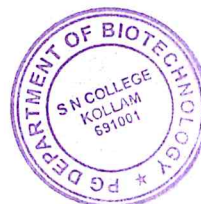
No. of students selected:

18

SL NO	Candidate code	Name of Student	Course	status	Signature
1	24719132001	ADHEENA S	Biotechnology	Passed	
2	24719132002	AISWARYA S	Biotechnology	Passed	
3	24719132003	AMAL SANKAR	Biotechnology	Passed	
4	24719132004	AMRITHA NAIR	Biotechnology	Passed	
5	24719132005	ANU KRISHNA K R	Biotechnology	Passed	
6	24719132006	ANUPAMA K RAJ	Biotechnology	Passed	
7	24719132007	ARCHANA A R	Biotechnology	Passed	
8	24719132008	NEHA S K	Biotechnology	Not Passed	
9	24719132009	PARVATHY R	Biotechnology	Passed	
10	24719132010	REJI RAJENDRAN	Biotechnology	Passed	
11	24719132011	SANTHRA SUBASH	Biotechnology	Passed	
12	24719132012	SAYANA R	Biotechnology	Passed	
13	24719132013	SWAHY SUNDARESAN	Biotechnology	Passed	
14	24719132014	VISHAL	Biotechnology	Passed	
15	24719132015	ABHIRAMI J	Biotechnology	Passed	
16	24719132016	ADWAITH K L	Biotechnology	Passed	
17	24719132017	AKHILA PRASAD	Biotechnology	Passed	
18	24719132018	AKSHAY S	Biotechnology	Passed	
19	24719132019	AKSHAY S KUMAR	Biotechnology	Passed	
20	24719132020	ALEENA JOY	Biotechnology	Not Passed	



GREESHMA.P  
Assistant Professor  
Department Of Biotechnology  
Sree Narayana College, Kollam-691001



# SREE NARAYANA COLLEGE KOLLAM

CERTIFICATE COURSE 2019-20

Department:



















BIOTECHNOLOGY

Name of Certificate course:

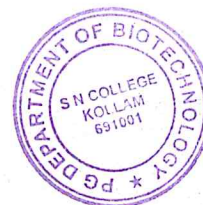
MICROBIAL TECHNIQUES

No. of students selected:

18

SL NO	Candidate code	Name of Student	Course	status	Signature
1	24719132001	ADHEENA S	Biotechnology	Passed	
2	24719132002	AISWARYA S	Biotechnology	Passed	
3	24719132003	AMAL SANKAR	Biotechnology	Passed	
4	24719132004	AMRITHA NAIR	Biotechnology	Passed	
5	24719132005	ANU KRISHNA K R	Biotechnology	Passed	
6	24719132006	ANUPAMA K RAJ	Biotechnology	Passed	
7	24719132007	ARCHANA A R	Biotechnology	Passed	
8	24719132009	PARVATHY R	Biotechnology	Passed	
9	24719132010	REJI RAJENDRAN	Biotechnology	Passed	
10	24719132011	SANTHRA SUBASH	Biotechnology	Passed	
11	24719132012	SAYANA R	Biotechnology	Passed	
12	24719132013	SWAHY SUNDARESAN	Biotechnology	Passed	
13	24719132014	VISHAL	Biotechnology	Passed	
14	24719132015	ABHIRAMI J	Biotechnology	Passed	
15	24719132016	ADWAITH K L	Biotechnology	Passed	
16	24719132017	AKHILA PRASAD	Biotechnology	Passed	
17	24719132018	AKSHAY S	Biotechnology	Passed	
18	24719132019	AKSHAY S KUMAR	Biotechnology	Passed	

  
**GREESHMA.P**  
Assistant Professor  
Department Of Biotechnology  
Sree Narayana College, Kollam-691001





# SREE NARAYANA COLLEGE KOLLAM

CERTIFICATE COURSE 2019-20

Department:


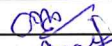

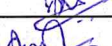
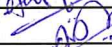

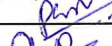

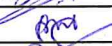

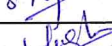

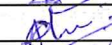
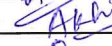

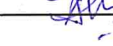


BIOTECHNOLOGY


Name of Certificate course:

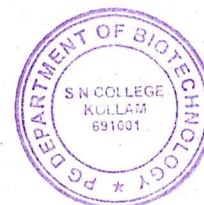
MICROBIAL TECHNIQUES

No. of students Passed:

18

SL NO	Candidate code	Name of Student	Course	status	Signature
1	24719132001	ADHEENA S	Biotechnology	Passed	
2	24719132002	AISWARYA S	Biotechnology	Passed	
3	24719132003	AMAL SANKAR	Biotechnology	Passed	
4	24719132004	AMRITHA NAIR	Biotechnology	Passed	
5	24719132005	ANU KRISHNA K R	Biotechnology	Passed	
6	24719132006	ANUPAMA K RAJ	Biotechnology	Passed	
7	24719132007	ARCHANA A R	Biotechnology	Passed	
8	24719132009	PARVATHY R	Biotechnology	Passed	
9	24719132010	REJI RAJENDRAN	Biotechnology	Passed	
10	24719132011	SANTHRA SUBASH	Biotechnology	Passed	
11	24719132012	SAYANA R	Biotechnology	Passed	
12	24719132013	SWAHY SUNDARESAN	Biotechnology	Passed	
13	24719132014	VISHAL	Biotechnology	Passed	
14	24719132015	ABHIRAMI J	Biotechnology	Passed	
15	24719132016	ADWAITH K L	Biotechnology	Passed	
16	24719132017	AKHILA PRASAD	Biotechnology	Passed	
17	24719132018	AKSHAY S	Biotechnology	Passed	
18	24719132019	AKSHAY S KUMAR	Biotechnology	Passed	

  
**GREESHMA.P**  
Assistant Professor  
Department Of Biotechnology  
Sree Narayana College, Kollam-691001



# SREE NARAYANA COLLEGE KOLLAM

CERTIFICATE COURSE 2019-20

## MARKLIST

Department:



















BIOTECHNOLOGY

Name of Certificate course:

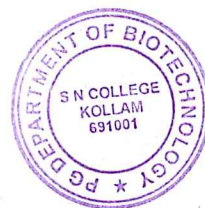
MICROBIAL TECHNIQUES

No. of students Passed

18

SL NO	Candidate code	Name of Student	Att Marks	Test marks	Total	Sign
1	24719132001	ADHEENA S	10	40	50	
2	24719132002	AISWARYA S	10	40	50	
3	24719132003	AMAL SANKAR	10	40	50	
4	24719132004	AMRITHA NAIR	10	40	50	
5	24719132005	ANU KRISHNA K R	10	40	50	
6	24719132006	ANUPAMA K RAJ	10	40	50	
7	24719132007	ARCHANA A R	10	40	50	
8	24719132009	PARVATHY R	10	40	50	
9	24719132010	REJI RAJENDRAN	10	40	50	
10	24719132011	SANTHRA SUBASH	10	40	50	
11	24719132012	SAYANA R	10	35	45	
12	24719132013	SWAHY SUNDARESAN	10	30	40	
13	24719132014	VISHAL	10	38	48	
14	24719132015	ABHIRAMI J	10	40	50	
15	24719132016	ADWAITH K L	10	40	50	
16	24719132017	AKHILA PRASAD	10	40	50	
17	24719132018	AKSHAY S	10	36	46	
18	24719132019	AKSHAY S KUMAR	10	40	50	

  
GREESHMA.P  
Assistant Professor  
Department Of Biotechnology  
Sree Narayana College, Kollam-691001





## REPORT OF THE CERTIFICATE COURSE 2019-2020

### MICROBIAL TECHNIQUES

Department of Biotechnology conducted certificate course, Microbial Techniques for the academic year 2019-2020. For the smooth functioning of the course a board of studies was formed including the Principal, College Level Certificate Course Coordinator, department level coordinator and faculties of the department. Department conducted meetings for preparing syllabus, title selection of the course, brochure preparation, project discussion and fixing examination date. Twenty students applied for the course and eighteen students were selected for course. Eighteen students completed the course. The classes were conducted on week days. The classes were handled by. Nimi Muraleedharan (HOD & Assistant Professor), Dr. Nitha Anand (Govt. Guest Faculty), Dr. Sayi D S (Govt. Guest Faculty), Dr. Divya Balakrishnan (Govt. Guest Faculty), Dr. Sujith S (Govt. Guest Faculty), Dr. Sija S L (Govt. Guest Faculty)

#### Outcome of the course

On completion of the course candidates will achieve the following objectives,

- A detailed knowledge of structure, function and application of microorganisms.
- Skills in handling microorganisms in the laboratory.
- An understanding of applications of microorganisms in the industry, health-care, environmental protection, food agriculture and research.



  
**GREESHMA.P**  
Assistant Professor  
Department Of Biotechnology  
Sree Narayana College, Kollam-691001

