

LOYOLA COLLEGE KUNKURI
Dist – Jashpur (C.G.)
Department of Microbiology
ANNUAL REPORT
Session – 2019-20

Mission

- To enhance the quality education by uplifting the hidden skills of students.
- To emerge as a global center of learning , academic excellence and innovative research work.
- To deliver exceptional result in all educational aspects.
- To develop attitude for lifetime learning.
- To orient students towards research.

Vision

- To achieve high standard of excellence in performing research work.
- Imparting of quality microbiological education and the inculcating the spirit of research through innovative teaching and research methodologies .
- To provide an atmosphere where student can learn up to level best and understand the use of microbiology in daily life as well as professional life .
- To promote innovative studies and research work .
- To empower students through quality education in microbiology.
- To establish a platform for creation and distribution of knowledge of microbiology in real life.

A Brief Note on Department of Microbiology

It was established in the year 2005. The department of microbiology is well equipped with all essential equipments and with extra infrastructure which support student to perform maximum research work with accuracy faculties are qualified , experienced energetic and are passionate about teaching profession . Microbiological journals are Available in the library for student's reference

Strength

- We are committed continuous self improvement to achieve excellence in all our endeavors.
- We are committed to innovation in our teaching research and outreach to our communities.
- We conduct various activities in every academic year to excel our students.

Department highlights

Name of department : Microbiology

Number of staff : 03

Faculty members : (1) Asst. Prof. Mahtab Ajam Khan (H.O. D.)
 (2) Asst. Prof. Vijay Kumar Vishwakarma
 (3) Anup kumar Chouhan (lab. Tech.)

Faculty profile :

S.N.	Name of faculty	Qualification	Teaching experience	Allotted classes
01	Mahtab Ajam Khan	M.Sc. (Bangalore University)	04 years	B.sc. I / II / III
02	Vijay Kumar Vishwakarma	M.Sc. (Sant. Gahira Guru University)	01 years	B.Sc. I / II/III

Laboratory instruments :

- Well equipped spacious laboratory with sophisticated test and measuring instruments and equipments.

Name of instrument	Quantity
Laminar air flow	01
Autoclave	02
Incubator	03
B.O.D.(incubator)	01
Hot air oven	02
water bath	02
Centrifuge	01
Spectrophotometer	02
Electrophoresis unit	02
u.v. Transluminator	01
Colony counter	01
pH meter	01
Weighing balance	01
Microscope	13
Computer setup	01
Glass pipette	10
Micro pipette	08
Hot magnetic stirrer	01
Refrigerator	01

Books availability in library :

- The library is well equipped with all essential reference books of various subjects including cell biology, immunology, biochemistry , genetic engineering , general microbiology , Eukaryotic microbiology , bacteriology and virology etc. for student's convenience.

Name of Title	Writer name	Number of books
Microbiology	Powar and Daignawala, S.S.Purohit, T.A. Brown , Presscott, Pelczar, U. Satyanarayana, Lehninger, Dubey and Maheshwari , S.B. Primrose , Immunology by Dolsy and Fatima, Bruce alberts etc.	330

Degree course:

Course	Paper / Paper code	Subject
B.Sc. I	Paper first / (30 A)	General microbiology and basic techniques.
	Paper second / (30 B)	Biochemistry and physiology
B.Sc.II	Paper first / (30 A)	Microbial physiology and genetics
	Paper second / (30B)	Principles of Bioinstrumentation and Techniques
B.Sc.III	Paper first / (30A)	Molecular biology and genetic engineering
	Paper second / (30B)	Environmental and medical microbiology

- No. of students in B.Sc. I = 24
- No. of students in B.Sc. II = 22
- No. of students in B.Sc. III = 10
- Each paper contains five units each unit holds ten marks for exam. The syllabus is approved by the Sant Gahira Guru Sarguja University, Ambikapur , C.G. The annul examination is conducted by the University once a year.

List of Practicals Performed :

B. Sc. I :

01 . Basic information about Autoclave, Hot air oven, Laminar air flow, and other laboratory instruments.

- 02 . Preparation of Solid and liquid culture media.
03. Enumeration of bacterial numbers by serial dilution and plating.
05. Isolation of single colony on solid media.
06. Simple and differential staining.
07. Determination of biological growth by Optical density measurement.
08. General and specific qualitative test for carbohydrates , amino acids and lipids.
- 09 . Estimation of Proteins and Blood glucose.
- 10 . Assay of the activity of amylase and phosphatase.

B.Sc. II :

01. Determination of antibiotic resistance by plating method.
02. Assaying of microbial enzymes - Catalase, Protease, Peroxidase, Cellulose, Amylase and Diastase .
03. Exercise on Paper ,thin layer , column chromatography.
- 04.Exercise on paper and gel electrophoresis.
05. Determination of pH of various water and soil sample.
06. Testing of Lambert beer's law.
07. Determination of Lamda max of dye by spectrophotometer.
08. Isolation of resistant bacteria from soil and water sample.

B.Sc.III :

- 01.Isolation of bacteria from air and soil (crop fields).
- 02.Isolation of fungi from air and soil.
- 03.Relationship between O.D. and C.F.U.
- 04.Measurement of fungal growth by dry weight and wet weight method.
- 05.Study of rhizosphere and phyllospheric microbes from economically important plants.
- 06.Biodegradation study of some organic molecules
- 07.Microbial assessment of potable water.
08. Determination of BOD, COD and DO.
- 09.Determination of Blood group by slide agglutination test.TLC/ DLC
- 10.Determination of heamoglobin .
- 11.Determination of quality of milk by MBRT.
12. Isolation of Rhizobium from root nodules.

Activities / workshop/ seminar conducted :

Date	Activity	Details
1 st July 2019	Welcome of first year students.	<i>Orientation lecture</i> by Principal Dr. Fr. Telesphor Lakra and Rector of Loyola house Kunkuri Dr. Fr. Panka Toppo S.J.
Progressive from July to January	Unit wise test and regular classes according to syllabus.	The dept. conducted unit wise test for all year students for their better preparation.

Progressive from September to December	Seminar presentation	The department conducted topic wise seminar for all students indivisually in the presence of teaching staff and guest.
Progressive from September to December	Practical performance and record maintenance for all three years.	The department conducted practical exercise based on syllabus for all three year's students.
29 th December 2019	Environmental visit to observe Biodiversity	The dept. visited ' <i>Madheshwar nature park Mayali</i> ' as Environmental visit with B.Sc. life science students .
10 th October 2019	Educational tour	Dept. visited ' <i>Rajmohini Devi Agricultural research Institute Ambikapur</i> ' and ' <i>Devbhog dairy industry Ambikapur</i> ' along with life Science students.
January 2020	Model examination	The dept. organized Model exam. For all year students for their better performance in main annual examination
8 th February 2020	Seminar Presentation (guest lecture)	The department organized a seminar where <i>Dr. Ashish kumar</i> , Dean of life science ,Sant Gahira Guru University delivered excellent information on the topic ' Scope of Microbiology' and also provided some useful guidelines for the students.
February to March	Remedial classes	The department organized remedial classes after completion of syllabus for all three year students.

Other Innovative Practices :

Orientation of faculty members on skill development Scheme :

Dr. Fr. Telesphor lakra (Principal) conducted an orientation lecture on '***Skill Development scheme***' under the guidance of Sant Gahira Guru University on 19/09/2019.

Group discussion and Skill improvement :

The department used to organize a special group discussion programme once a weak (on Saturday) in which we focused on the Student's Oral Performance on the different

topics according to their syllabus. This initiative aided student's verbal communication with other staff members.

Carrier Guidance programme :

The department took an initiative to provide Carrier guidance to the life Science students once a month so that they can have knowledge and Ideas of their related fields and subjects.

Picture .01 : Orientation lecture by Principal Dr. Fr. Telesphor Lakra and Rector of Loyola house Kunkuri Dr. Fr. Panka Toppo , S.J.



Picture . 02: Lecture on “ Orientation of faculty members on Skill Development Scheme” by Principal Dr.Fr. Telesphor Lakra.



Picture . 03 : Environmental visit (Madheshwar Nature Park Mayali) to Observe Biodiversity.



Picture . 04 : Educational tour (*Devbhog Dairy Industry Ambikapur, C.G.)*



Picture . 05 : Educational tour (*Rajmohini Devi Agricultural Research Institute Ambikapur, C.G.)*



Picture .06 : Seminar presentation (Guest lecture) by *Dr. Ashish kumar*, dean of Life Science , Sant. Gahira Guru University Ambikapur , (C.G.).



Picture .07 : Principal Dr. , Fr. Tetesphor Lakra Welcoming Dr. Ashish Kumar at Loyola College Kunkuri for Seminar Presentation.



Picture . 08 : Carrier guidance programme on behalf of dept. of Microbiology and Biotechnology.



Picture.09 : Students of Microbiology performing their practical .

