

**LOYOLA COLLEGE KUNKURI**  
**Dist – Jashpur (C.G.)**  
**Department of Biotechnology**  
**ANNUAL REPORT**  
**Session – 2020-21**

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**Mission**

- To enhance the quality education by uplifting the hidden skills of students.
- To emerge as a global centre of learning , academic excellence and innovative research work.
- To deliver exceptional results 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 biotechnology 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 Biotechnology in daily life as well as in professional life .
- To promote innovative studies and research work .
- To empower students through quality education in biotechnology.
- To establish a platform for creation and distribution of knowledge of biotechnology in real life.

**A Brief Note on Department of Biotechnology**

- It was established in the year 2005. The department of biotechnology 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 , Biotechnology journals are Available in the library for students 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** : **Biotechnology**

**Number of staff** : 03

**Faculty members** : (1) Dileshwar Ram Yadav (Asst. Prof and Head)  
(2) Vijay Kumar Vishwakarma. (Asst.Prof.)  
(3) Mr. Anup Kumar Chouhan ( Lab. Tech.)

**Faculty profile** :

S.N	Name of faculty	Qualification	Teaching experience	Allotted classes
01	Dileshwar Ram Yadav	M.Sc.(Sant Gahira Guru University )	03 years	B.sc. I / II / III
02	Vijay Kumar Vishwakarma	M.Sc.( Sant Gahira Guru University)	02 years	B.Sc. I / II/ III

**Laboratory facilities** :

- 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. Transilluminator	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

**Library facilities :**

Name of Title	Writer name	Number of books
Biotechnology	B.D singh,S.N Jogdan U. Satyanarayana, KC Sony, Lehninger,Dubey and Maheshwari, S.B. Primrose , Immunology by Kub. y, Dolsy and Fatima, Bruce Alberts etc.	350

**Degree course:**

Course	Paper	subject
B.Sc. I	Paper first (29A)	Cell Biology Genetics and Microbiology.
	Paper second (29 B)	Biochemistry ,Biostastics and Computers.
B.Sc.II	Paper first (29 A)	Molecular biology and Biophysics.
	Paper second (29B)	Recombinant DNA Technology and Genomics.
B.Sc.III	Paper first (29A)	Environmental and plant Biotechnology.
	Paper second (29B)	Immunology.

- No. of students in B.Sc. I = 32
- No. of students in B.Sc. II = 9
- No. of students in B.Sc.III = 17
- Each paper contains five units, each unit holds ten marks for exam. The syllabus is approved by the Sant Gahira Guru University, Sarguja Ambikapur , C.G. The annul

examination is conducted by the University once a year. The syllabus is well designed according to competitive exam such as NET , SET, GATE etc.

### **List of Practicals performed**

#### **B.Sc. I**

1. Laboratory rules , Tools , Equipments and other requirements in Microbiological laboratory.
2. Micrometry – Use of Ocular and stage Micrometer .
3. Counting of bacteria by counting chamber by plate count.
4. Preparation of media and cultivation techniques-
  - A. Basic liquid media( broth )
  - B. Basic solid media ( agar slant and deep tubes)
  - C. Demonstration of selective and differential media
  - D. Isolation and enumeration of microorganism.
  - E. Isolation from air and soil
5. Smear and staining method-
  - A. Preparation of bacterial smear.
  - B. Gram positive and Gram negative staining.
6. Methods of obtaining Pure culture-
  - A. Streak plate method.
  - B. Pour plate method .
  - C. Spread plate method
  - D. Broth culture.
7. Growth and Biochemical techniques-
  - A. Determination of bacterial growth curve.
  - B. Amylase production test.
  - C. Cellulase Production test.
  - D. Estimation of Sugar in given solution.
  - E. Extraction and separation of Lipids.
  - F. Estimation of Proteins.
  - G. Meiosis and Mitosis.

#### **B.Sc. II**

1. Isolation of DNA from plant cell.
2. Estimation of DNA by DPA method.
3. Isolation of RNA from yeast cell.

Experiment based on –

4. Centrifugation.
5. Spectrophotometer and Colorimeter.
6. Electrophoresis.
7. Paper chromatography and TLC.

Experiment based on Bioinformatics –

8. Retrieve DNA and protein sequences from Biological Database ( NCBI ).
9. Use of Tools studies

### **B.Sc. III**

1. Preparation of Tissue culture media.
2. Sterilization of plant materials.
3. Seed germination – Root, Shoot and callus culture.
4. Determination of TDS of water.
5. Determination of DO, BOD , COD of water.
6. Determination of Coliform MPN test .
7. Production of Enzymes / Antibiotics / Acids.
8. Effects of Biopesticides on microorganisms.
9. Antigen-Antibody interaction- Determination of Blood group and Rh factor.
10. WIDAL test.
11. VDRL test.
12. ELISA test.
13. Perform of Immuno-diffusion.

<b>Date</b>	<b>Activity</b>	<b>Details</b>
Progressive from 15 <sup>th</sup> October 2020	Commencement of online classes for First year students.	The department started taking online classes for First year students on regular basis.
2 <sup>nd</sup> January 2021	Commencement of second and third year classes in offline mode.	The conducted commenced regular offline classes for all three years .
Progressive from January to March 2021	Teaching and unit wise test	The department conducted unit test for all three year students.

February to March 2021	Practical performance along with record maintenance.	The department conducted practical exercise based on syllabus for all three year's students.
February to March 2021	Seminar Presentation	All three year students presented seminar on selected topics.
18 <sup>th</sup> February 2021	Quiz Competition	Mentoring committee organized a Quiz competition for all students to excel their ability.
February 2021	Drawing Competition	Mentoring committee held a drawing Competition in order to polish hidden talent of students. All students were actively participated.
March 2021	Short Drama act competition on current issues	Organized by mentoring committee .
March 2021	Environmental visit for first year students	Organized by life Science department to observe Biodiversity
March 2021	Remedial classes	The department organized remedial classes after completion of syllabus for all three year students.

**Seminar/ conference/ workshop/ webinar participated :**

- Asst. Prof. Dileshwar Ram Yadav and Vijay Kumar Vishwakarma attended one day international webinar on “ For Assuring and Enhancing Quality : JUAA and QA Scheme In Japan ” organized by NAAC on 23<sup>rd</sup> April 2021

- Asst. Prof Vijay vishwakarma attended 2 days workshop on NAAC organized by IQAC Sant Gahira Guru Vishwavidyalaya Sarguja Ambikapur from 29<sup>th</sup> May 2021.
- Asst prof. Vijay vishwakarma and Mahtab ajam khan attended one day national webinar on “ Building bridges between Mathematics and Computer science ” organized by dept. of Mathematics Loyola college Kunkuri , Jashpur ( C.G.).
- Asst . Prof . Dileshwar Ram Yadav and Vijay Kumar vishwakarma participated online conference on “ Water conservation , Biodiversity conservation and other immediate issues ” held on 19<sup>th</sup> June 2021 Organized by district collector Jashpur (C.G.) .

### **Student achievement**

- Arti vanvasi and Sonam Lakra participated in drawing competition held on Feb. 2021 at loyola college kunkuri and got selected in top 10 list, both were awarded by Nagar panchayat president Kunkuri.
- Student of Biotechnology and Microbiology jointly secured first place in short drama act, held on March 2021 at Loyola college Kunkuri . They awarded by respected Principal Loyola college Kunkuri , Fr. Oscar Sj. Oscar Tirkey.

### **Picture 01 : Virtual meeting with students during online classes. Orientation lecture by Principal Dr. Fr. Oscar S. Tirkey SJ**



**Picture 02 .: Carrier guidance meeting with life Science students.**



**Picture 03. : Practical performance in laboratory.**



**Picture 04 : Presentation of drawing Competition.**





**Picture 05 : Award distribution for short drama act competition. Dept. of Micro. And Biotech. Students jointly receiving 1<sup>st</sup> Prize .**



**Picture 06 :- An environmental visit for first year students ( life science).**

