

LOYOLA COLLEGE KUNKURI
Dist – Jashpur (C.G.)
Department of Biotechnology
ANNUAL REPORT
Session – 2016-17

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) Anuradha Tirkey(Asst. Prof and Head)
 (2) Mahtab Ajam Khan. (Asst.Prof.)
 (3) Mr. Anup Kumar Chouhan (Lab. Tech.)

Faculty profile :

S.N	Name of faculty	Qualification	Teaching experience	Allotted classes
01	Anuradha Tirkey	M.Sc. M. Phil.	01 years	B.sc. I / II / III
02	Mahtab Ajam Khan	M.Sc.	01 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.	310

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 = 20
- No. of students in B.Sc. II = 08
- No. of students in B.Sc.III = 11
- 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 annual 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.

Activities conducted

Date	Activity	Details
1 st July 2016	Welcome of first year students	Orientation lecture by Principal Dr. Fr. Oscar S . Tirkey S.J.
10 th July 2016	Commencement of first year classes	Regular classes started for first year students according to their syllabus.
25 th July 2016	Commencement of 2 nd and 3 rd year classes	Regular classes started for second and third year students according to their syllabus.
10 – 14 August 2016	First year unit test	The department conducted unit wise test for student's better preparation.
Progressive from August to December 2016	Regular classes and practical work for all three year students according to their syllabus	From August onwards , practical experiments started for all three year students with unit wise test .
10– 18 October 2016	Quarterly examination	The dept. organized quarterly examination for all three year students in order to strengthen their concept.
08 – 25 January 2017	Model examination	The dept. organized Model exam. for all year students for their better performance in main annual examination.

February to March 2017	Remedial classes	The department organized remedial classes after completion of syllabus for all three year students.
March 2017	Final practice and preparation for practical examination along with doubt classes.	The department focused on the student's practical performance and also organized doubt classes for all students.

Other innovative practices :

01.Carrier Guidance programme :

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

02. Quiz competition event

The department had organized a quiz competition event for all three year students after completion of their syllabus, dated on 14th December 2016 . The idea was to enlighten their knowledge and verbal skill . All three year students participated in the quiz competition.

03 . Swachta Abhiyaan :

Department of Microbiology and Biotechnology had organized **Swachta Abhiyaan** under the **Swachh Bharat Mission** in Barangor ,Tehsil Kunkuri Dist Jashpur (C.G.) dated on 29th November 2016 . In this event total student of B.Sc. II year from both the department contributed their duties by generating awareness among the villagers regarding the importance of cleanliness and personal hygiene. This event was organized under the supervision of Dr. Fr. Oscar S. Tirkey Principal Loyola college Kunkuri.

Picture. 01 : Orientation lecture by Principal Dr. Fr. Oscar S. Tirkey , welcoming first year students.



Picture. 02: Students of Microbiology and Biotechnology visiting Barangjor village under *Swachh Bharat Mission* .



Picture. 03 : Microbiology First year students performing their practical in laboratory.



Picture .04 : Students of Microbiology, Preparing for Annual Examination .

