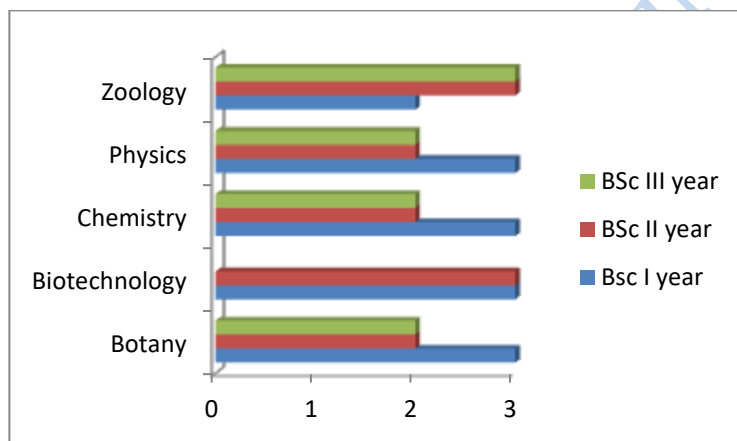


St Aloysius College (Autonomous),

Jabalpur, Madhya Pradesh

Practical conducted under the Star College Scheme

Sno	Department	Bsc I year	BSc II year	BSc III year
1	Botany	3	2	2
2	Biotechnology	3	3	
3	Chemistry	3	2	2
4	Physics	3	2	2
5	Zoology	2	3	3



Department of Biotechnology

BSc III year

- Quantitative determination of proteins from pulses.
- Preparation of skimmed milk by centrifugation.
- Revival of preserved culture (lyophilized).

BSc II year

- To study the antibiotic resistance of bacteria from soil/water by replica plating.
- Study of green fluorescent protein tagged bacteria.
- Gene cloning.

Department of Botany

B.Sc I year:

- Demonstration of functioning of Genome Sequencer.
- Assessment of Algae (phytoplankton, diatoms) from various water sources.
- Microscopic examination of various fungal isolates from infected food sample.

B.Sc II year

- Comparison of morphology of microbes isolated from dairy samples.
- Study of plasmolysis and deplasmolysis in different plant cells using different concentration solution

B.Sc III year

- Microbial analysis of different food samples
- Quantitative analysis of protein sample

Department of Chemistry

BSc III year

- Spectrophotometric estimation of Proteins in food samples
- Spectrophotometric estimation of Carbohydrates in food samples
- Spectrophotometric estimation of Iron and Magnesium

BSc II year

- Gel Preparation and its anti microbial study
- Demonstration of BOD and COD

BSc I year

- Synthesis of Drugs and their antibacterial study
- Demonstration of BOD and COD

Department of Physics

B.Sc III Year

- To study the Zeeman effect of Mercury & to find the value of Bohr Magneton and to find the specific charge of electron
- To determine the Hysteresis Loss of given Ferromagnetic material.
- To determine the Plateau and optimal operating voltage of a GM Counter

B.Sc II Year

- To study the Faraday Effect & to determine Verdet's constant
- Study of LCR transient response

B.Sc I Year

- To determine Young's modulus of steel by flexural vibrations of a bar.
- Demonstration of Four Stroke Heat Engine

Department of Zoology

BSc I Year

- Calculation of stages of meiotic cell division under Phase Contrast Microscope
- Study of Polytene chromosome under Phase Contrast Microscope.

BSc II Year

- Semen analysis and exercise on sperm count using Phase contrast microscope

- Serological tests- Elisa Reader
- Comparative biochemical analysis of evaporated milk samples using Rotary Vacuum Evaporator

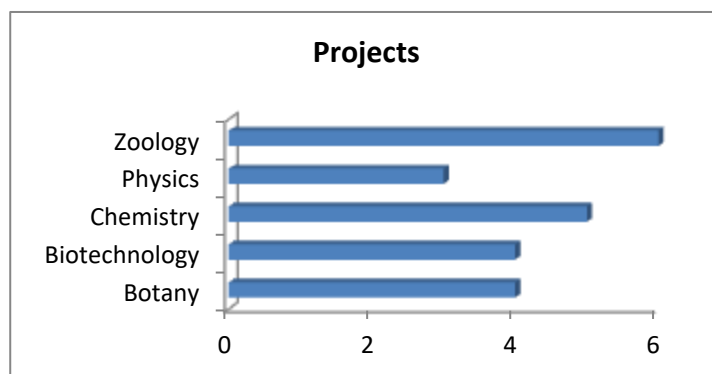
BSc III Year

- Study of Principle and Working of PCR Comparative analysis of short DNA sequences using PCR thermocycler
- Comparative analysis of short DNA sequences using PCR thermocycler
- Study of Human Karyotype under Phase Contrast Microscope

St Aloysius College (Autonomous), Jabalpur

Minor Projects Conducted

Sno	Department	Projects
1	Botany	4
2	Biotechnology	4
3	Chemistry	5
4	Physics	3
5	Zoology	6

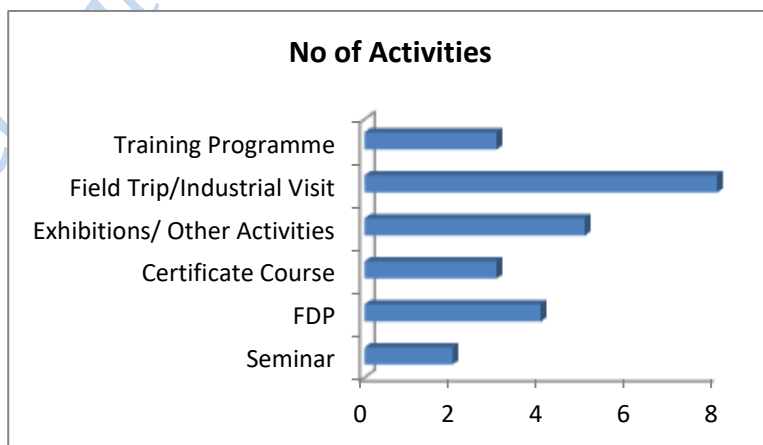


- To study the growth curve of bacteria in different anti-bacterials available in the market. **(Biotechnology)**
- Isolation and culture of aspergillus/other fungus from peanuts from different shops. **(Biotechnology)**
- Preparation of template for gene cloning. **(Biotechnology)**
- Separation of secondary metabolites from fungal endophytes under abiotic stress. **(Biotechnology)**
- Study of growth kinetics of some bacterial species under different concentration of PEG. **(Biotechnology)**
- Isolation of fungi from dairy samples **(Botany)**
- Vermicomposting **(Botany)**
- Isolation and study of Rhizobium **(Botany)**
- Isolation of fungi from various samples – soil, dairy products, grains, pulses, fruits and vegetables. **(Botany)**
- Water sample analysis (Alkalinity, Acidity, Hardness, Fluoride Content) **(Chemistry)**
- Estimation of Protein in different samples **(Chemistry)**
- Estimation of Caffeine in tea and coffee **(Chemistry)**
- Estimation of Nicotine in Cigarette **(Chemistry)**
- Estimation of carbohydrate in cough Syrups **(Chemistry)**
- Comparison of B-H Curve of different materials **(Physics)**
- Study of B-H Curve of Soft Iron at different temperature **(Physics)**

- Measuring the counts present in various household (e.g. Salts of different brands) goods (**Physics**)
- Minor Project on Poultry farming of Jabalpur city (**Zoology**)
- Taxonomic Studies of animals and insects of water bodies (**Zoology**)
- Survey of fish markets of Jabalpur city (**Zoology**)
- Study of Lifestyle disease in Jabalpur city (**Zoology**)
- Study of effect of water pollution on the biodiversity of fishes (**Zoology**)
- Study of ornamental fishes and Aquarium maintenance (**Zoology**)

Seminars/ Faculty Development Programme /Certificate Courses/ Exhibitions and Other Activities/ Field Visit and Industrial Trip/ Training Courses Conducted under the Star College Scheme

Sno	Activity	No of Activities
1	Seminar	2
2	FDP	4
3	Certificate Course	3
4	Exhibitions/ Other Activities	5
5	Field Trip/Industrial Visit	8
6	Training Programme	3



Seminar/ Webinar Conducted

- A webinar for neighboring colleges was conducted on 14/05/22 entitled “Star College Scheme by DBT- An Overview” to motivate the institutes to apply for Star College Scheme by DBT.
- The Lifesciences faculty (Biotechnology, Botany, Chemistry and Zoology) organized a two days National webinar entitled “ Life Sciences: Acceptance of New Normal” on 27th -28th August, 2021.

Faculty Development Program Conducted

- All the five Star College Scheme sponsored departments- Department of Biotechnology, Microbiology, Chemistry, Physics and Zoology conducted FDP for School teachers “ Bench Marking Skill Development at School Level” on 29th-30th October, 2021
- Faculty Development Programme was conducted on “Innovative Research Practices” from 21st- 26th March 2022 (**Botany**)
- Faculty Development Programme was conducted on “Instrumentation and Analytical Techniques in Chemistry” from 20th -25th June, 2022 (**Chemistry**)
- Faculty Development Programme was conducted on “Biopharmaceuticals Technology & Probiotics” from 8th - 14th November, 2021 (**Zoology**)

Certificate Course

- Certificate course on Application of Chemistry in Everyday Life Started from 10th November 30th November, 2021 (No of Beneficiaries= 41 UG Students) (**Chemistry**)
- Certificate course on “Instrumentation and Analytical Techniques” from 5th February to 19th February, 2022 (No of Beneficiaries= 31 UG Students) (**Chemistry**)
- Certificate course on Innovative Zoological Practices from 17th January to 17th February, 2022(No of Beneficiaries= 25 UG Students) (**Zoology**)

Other Activities

- Department of Biotechnology on occasion National Science day 28th February, 2022 Meme making, Reel and Spell bee competitions were organized.
- Department of Botany on occasion of National Science Day on 28th February, 2022 the conducted Poster and Best out of waste Competition
- Department of Chemistry on occasion of National Science Day on 28th February, 2022 the conducted Slogan Writing competition and Quiz Competition to generate scientific temper.
- Department of Physics organised Quiz Competition, Working Model Competition, Skit on 24th & 25th February 2022 to celebrate National Science Day

- Department of Zoology conducted Bio Rangoli and wild life photography on 18th and 19th February 2022

Field Visit/ Industrial Trip (Extension Activity)

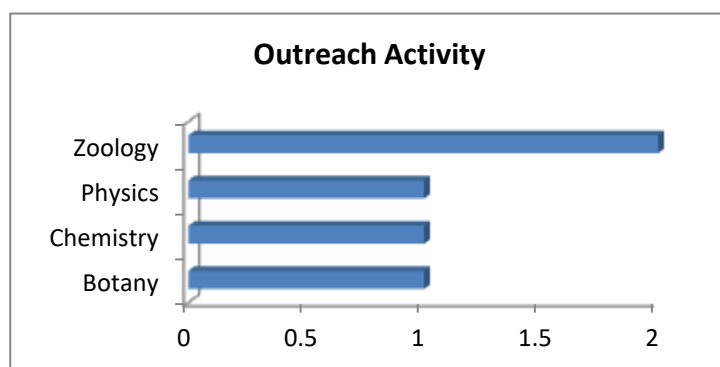
- 31 students were taken on an educational trip to Indian Institutes of Science Education and Research Bhopal on 31st March, 2022 (**Biotechnology**)
- 27 students were taken on an Educational trip to National Center for Biological Researches, Tata Institute of Forest Research (TIFR), Pachmarhi, Madhya Pradesh on 9th -10th March 2022. (**Botany**)
- 42 students visited Kareli Sugar Mill, Kareli, Madhya Pradesh on 15th February, 2022 (**Chemistry**)
- 32 Students visited weapons exhibition organized by Gun Carriage Factory, Jabalpur on 13th December 2021(**Physics**)
- 23 Students visited Regional Science Center, Bhopal on 18th February 2022 (**Physics**)
- 23 Students visited Institute of Excellence in Higher Education, Bhopal on 19th February 2022 (**Physics**)
- 29 students visited Rani Avanti Bai Sagar Hydroelectric Power plant on 22nd February 2022 (**Physics**)
- 42 students visited Bandhavgarh National Park, Bandhavgarh, Madhya Pradesh on 19th-20th February,2022 (**Zoology**)

Training Programme

- A Training programme on “Mushroom cultivation” was conducted from 10th Jan-9thFebruary 2022 (**Botany**)
- A Training programme was conducted on “Bonsai development” was conducted on 21st March, 2022 (**Botany**)
- Training Programme on Sanitizer Making and Moisturiser Making for students and teachers was conducted on 20th December, 2021 (**Chemistry**)

Outreach Activities

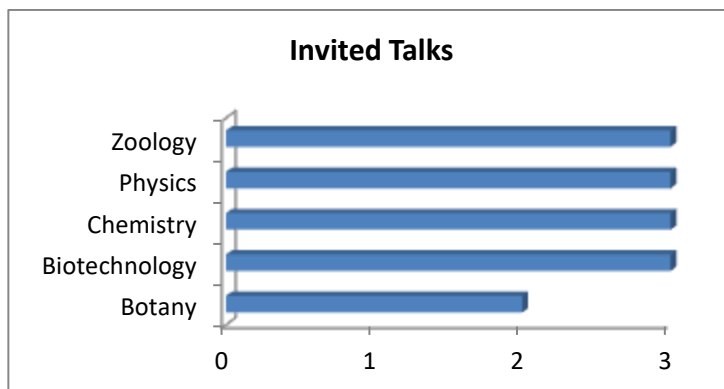
Sno	Department	Outreach Activity
1	Botany	1
2	Chemistry	1
3	Physics	1
4	Zoology	2



- World Food day celebration on 23rd October, 2021 by Food donation by faculties & students (**Botany**)
- An awareness poster drive and lecture was conducted on occasion of Zero Discrimination Day, 1st March, 2022 (**Chemistry**)
- Department has also organised Talk & Demonstration on experiments related to Basic Science. The Speaker was Dr. M.K.Roy, IIITDM, Jabalpur on 25th February 2022 (**Physics**)
- “Cancer Awareness Program” was conducted for Saraswati Vidya Bharti School, Jabalpur Madhya Pradesh on 7th Feb, 2022 (**Zoology**)
- Awareness drive and tree plantation was done World Environment Day June 5th, 2022(**Zoology**)

Guest/ Invited Lectures under the Star College Scheme

Sno	Department	Invited Talks
1	Botany	2
2	Biotechnology	3
3	Chemistry	3
4	Physics	3
5	Zoology	3



- A guest lecture was organized on the topic “Molecular Diagnostic technique” by Dr. Kuldeep Sharma, Scientist C at AIMS, Raipur Chhattisgarh on 1st October, 2021 (**Biotechnology**)
- A guest lecture was organized on “Recent Trends in Breast Cancer research” by Ms. Pallavi Kulkarni, Scholar and ICMR SRF, Biochemistry at AIIMS, Bhopal on 4th February, 2022 on occasion of World Cancer Day (**Biotechnology**)
- **Department of** A guest lecture was organized on “Invasive plant species and our environment” by Dr. Puja Ray, Assistant Professor, Presidency University, Kolkata on 30th September, 2021 (**Botany**)
- A guest lecture was organized on the topic “Dietary oils and health” by Dr. Daniel A. Gibleon, Bishop Heber College on 23rd October, 2021. (**Botany**)
- A Guest Lecture was organized on the topic of "Identification of fungal culture" by Dr. Rohit Sharma, Assistant Professor, SAGE University on 2nd March, 2022. (**Botany**)
- An online guest lecture was organized on “UV-Visible Spectroscopy and its Applications” by Dr. A.K. Bajpai Professor, Govt. PG College Seoni on the topic on 23rd September, 2021 (**Chemistry**)
- An online guest lecture was organized on “Importance of Diet” and “Concept of RDA and BMI” by Mrs. Ugrataara Rajak, Dietician on 2nd and 3rd February, 2022 (**Chemistry**)
- An Online guest lecture was organized on the topic “Zero Shadow Day” by Dr. Laxmikant Chawre, Center for Basic Science, Pt.Ravi Shankar Shukl University , Raipur on 10th June 2021 (**Physics**)

- An Online guest lecture was organized on “The Mars Mission & Opportunity in Astrophysics” by Mr. Saket Singh Kaurav, Curator Regional Science Center, Bhopal on 18th September 2022 **(Physics)**
- An Online guest lecture was organized on the topic “The Universe” by Dr. Laxmikant Chawre, Center for Basic Science, Pt. Ravi Shankar Shukl University, Raipur on 15th February 2022. **(Physics)**
- A Guest lecture was organized on *Next Genome Sequencing* by Dr. A P Singh Professor and Director of Animal Biotechnology Center, Nanaji Deshmukh Veterinary Science University Jabalpur MP on 25th September, 2021 **(Zoology)**
- A Guest Lecture was organized on “An interdisciplinary approach in neuroengineering for recovery of demyelinating diseases” by Dr. Hemanga Kumar Das PhD (Neuroengineering), Parul University, on 8th November 2021 **(Zoology)**
- A guest lecture was organized on “Vermicomposting as an eco tool in sustainable solid waste management and one step towards entrepreneur” by Mr. A Dhananjay Founder Tridev Organic Solution on 1st February 2022 **(Zoology)**