

Dept. of Microbiology
Govt. V.Y.T. PG. Autonomous College, Durg (C.G.)
‘Workshop and Hands on Training
on
Advance Learning in Biological Sciences’
January 13-19, 2020

13.01.2020 Day 1: A. Experimental designs: Basic concepts and principles and significance of Biostatistics – Dr. Rajeev Choudhary, SOS in Physical Education, Pt. RSU, Raipur

B. Activity on preparations for Case study and Biostatistics

14.01.2020 Day 2: A. Lecture: Bioinformatics – Dr. Ranjana Sahu, BMM, Bhilai

B. Poster presentation Competition – M.Sc. Students

15.01.2020 Day 3: A. Lecture: Research Publication, Research Matrix and Plagiarism– Dr. Arti Parganiha, SOS in Life Science, Pt. RSU, Raipur

B. Hands on Activity on Publication sites, h index, i10 index, Impact factors

16.01.2020 Day 4: A. Learning through Quiz: Dr. Pragya Kulkarni (KAHOOT)

B. Preparation of Posters and Explanation: Dr. Anupama Asthana, Dr. Ranjana Shrivastav and Dr. Ranjana Sahu

17.01.2020 Day 5: A.Lecture: PCR and RT PCR – Dr. Deepak Bharti, CMBRT, Bhopal

B. Hands on: Primer designing for amplification of specific gene sequence

18.01.2020 Day 6: A. Lecture: SDS PAGE and calculation of Molecular weight of polypeptide

B. Hands on DNA extraction through blood and Bacterial cells, Gel electrophoresis for DNA and Protein and band analysis

19.01.2020 day 7: Industrial Visit: ABIS Dairy Pvt. Ltd., Rajnandgaon

To,

The Principal,
Govt. VYT. PG. Autonomous College,
Durg, C.G.

Subject: Letter for Permission to organize A Workshop and Hands on Training

Sir,

With reference to the subject, Dept. of Microbiology is seeking permission to organize A Workshop and Hands on Training on “Advance Learning in Biological Sciences” for the benefit of the PG and Ph.D. students of microbiology. The program comprising lectures and Hands on Training through Activity and Dry Lab courses in collaboration with experts in the field. It is therefore requested to grant permission to organize the same during 13 -19 January 2020.

Thanking you in anticipation,

Yours faithfully,



Head, Dept. of Microbiology
Govt. VYT PG Autonomous College, Durg

**‘Workshop and Hands on Training
Advance Learning in Biological Sciences’**

Brief Report

<p>Biostatistical Tools (13.01.2020)</p>	<ul style="list-style-type: none"> ➤ A lecture on conduct of true experiments through Biostatistical tools were given by Dr. Rajeev Choudhary, Professor, Pt. RS University, Raipur ➤ The students also learn to select proper method to make the experiment statistically significant ➤ Use of Software and Data Excel sheets for statistical analysis was also demonstrated in the lecture
<p>Out come</p>	<ul style="list-style-type: none"> ➤ Students were able to learn step wise progression of Biostatistical analysis ➤ They are able to differentiate the true experiment and survey method to interpret any investigation ➤ The students were get familiar with the user friendly software on statistics ➤ Students were known with the importance of statistics in biological experiment designing and implementations
<p>Preparation of Case Study and Central Limit Theorem (13.01.2020)</p>	<ul style="list-style-type: none"> ➤ An Activity was conducted on preparation for case study by Dr. Sapana Sharma Saraswat, Dept. of Sociology, Govt. VYT PG Autonomous College, Durg ➤ The activity covered the basic principles and defining terms of Case Study and importance of Case studies and construction of Questionnaires for a case study was discussed ➤ The activity on Central Limit Theorem was demonstrated with the help of virtual dice method by Mr. Rishi Kant Choudhary, Research Scholar, Economic, Govt. VYT PG Autonomous College, Durg ➤ Normal distribution curve was obtained through activity
<p>Outcome</p>	<ul style="list-style-type: none"> ➤ The students were learning the concept of case study ➤ A new avenue of Case studies was introduced in the class ➤ The students were explained with tools to prepare and study any case and make useful conclusions ➤ The students got aware of using virtual Dice to for large number of samples in a short period of time to study the use of Central Limit

	<p>Theorem</p> <ul style="list-style-type: none"> ➤ The students understand the importance of statistics in Biological experiments
<p>Basic Concept of Bioinformatics (14.01.2020)</p>	<ul style="list-style-type: none"> ➤ A lecture on Basic concept of Bioinformatics was delivered by Dr. Ranjana Sahu, Bhilai Mahila Mahavidyalaya, Bhilai ➤ The lecture covered the basic principles and defining terms of bioinformatics ➤ Importance of Metagenomic studies and construction of phylogentic relationship among the microorganisms were also explained in the lecture
<p>Outcome</p>	<ul style="list-style-type: none"> ➤ The students were learning the concept of Bioinformatics ➤ A new avenue of meta genomic studies was introduced in the class ➤ The students were explained with modern tools to identify microorganisms and make their own data base for future studies
<p>Research Publication, Research Matrices and Plagiarism Checking (15.01.2020)</p>	<ul style="list-style-type: none"> ➤ A lecture on Research publications, research matrix and plagiarism was delivered by Dr. Arti Parganiha, Pt. RS University, Raipur ➤ The lecture covered the dimensions of research, types of scientific writings and different data base provided for online search ➤ The lecture also covered the various search engines available as open access ➤ Information about search for subject related journals, Impact factor of journals, Author index, h index, i10 index was also demonstrated in the lecture ➤ The term plagiarism and related ethical issues were introduce with the students
<p>Outcome</p>	<ul style="list-style-type: none"> ➤ The students were able to search their own study material as well as the area of interest ➤ They are familiar with the wide range of work going on during past years ➤ The student learnt the possible publication pathways to publish their work in future ➤ The students were demonstrated with plagiarism checking and its importance in research publication

<p>Learning through Quiz: (KAHOOT) (16.01.2020)</p>	<ul style="list-style-type: none"> ➤ Initial Screening of participants was done by online method through KAHOOT software ➤ The questions were based on the lectures delivered and hands on given during activity week ➤ All together 37 participants were registered for online quiz ➤ Selected top 12 students were arranged in four groups and participated for stage rounds ➤ There were MCQ, Pass, Rapid fire and Visual rounds for further selection of Winner and Runner-up of the quiz ➤ The remaining participants were also engaged as team audience
<p>Outcome</p>	<ul style="list-style-type: none"> ➤ Students gain knowledge of the use of outcome-based learning in a limited time frame ➤ The KAHOOT free software is a reliable tool to conduct quiz up to 50 participants. It gives a detailed report of analysis of per question and per participant data and can be stored for future references ➤ They discover the importance of team work during stage rounds ➤ Audients were actively participated during their question rounds and be trained for prompt answering
<p>Preparation of Posters and Explanation</p>	<ul style="list-style-type: none"> ➤ Poster presentation competition was organized in the department ➤ All together 07 posters were made by the PG students in a group ➤ The topics were open for all particularly based on the advanced concepts of Microbiology ➤ Dr. Anupama Asthana, Dr. Ranjana Shrivatava and Dr. Ranjana Sahu was agreed to judge the competition
<p>Outcome</p>	<ul style="list-style-type: none"> ➤ First – Recent Research in Microbiology: Ku. Snehal Pillai and Yogesh Bokade ➤ Second – Saving the world with Microbes: Ku. Y. Yoshi, Ku. Kiran, Ku. Payal, Ku. Deepti, Ku. Subhadra and Ku. Ritu ➤ Third – Risks of Antibiotics: Ku. Ananya, Ku. Priyanka, Ku. Savita, Pramod, Dharamraj and Ku. Hirondi
<p>Lecture and Dry Lab on Molecular Techniques (17 - 18 January 2020)</p>	<ul style="list-style-type: none"> ➤ Lecture on PCR technique was delivered by Dr. Deepak Bharti, CMBR, Bhopal ➤ The lecture covered the basic techniques and wide applications of PCR ➤ Lecture was based on Primer designing and proper amplification of

	<p>DNA for future applications of Bioinformatics</p> <ul style="list-style-type: none"> ➤ Hands on Training was given for extraction of DNA and Protein and their further analysis through electrophoresis
	<ul style="list-style-type: none"> ➤ The students be trained of instrument handling and precautions necessary for PCR amplification of DNA ➤ They were get aware of importance and applications of Bioinformatics in advance learning ➤ The students were become skilled at DNA extraction from blood and Bacterial colonies ➤ The students were able to analyze the DNA bands, their molecular size and resolution on Agarose gel electrophoresis ➤ Total protein was extracted from bacterial samples and further run through SDS PAGE. Students were able to find out number of polypeptides, their molecular weight and further applications of SDS PAGE analysis
Industrial Visit (19.01.2020)	<ul style="list-style-type: none"> ➤ An Industrial visit was arranged to ABIS Dairy, Rajnandgaon ➤ Students were given live demonstration of Cattle farming for Buffalo and Cow, their milking schedules and routine hygiene check ups ➤ The processing of raw milk for packaging and sale and handing out for conversion into products were confirmed ➤ The microorganisms interfering during milk handling and product processing was also demonstrated
Outcome	<ul style="list-style-type: none"> ➤ The students gain knowledge of the large-scale care taking of animals, their daily monitoring and essential precautions with reference to microbial contaminations during milking and milk processing ➤ They were get aware of types of products and their management for sales and services in any industry ➤ They were also learn the role of microbiologist in such types of industries

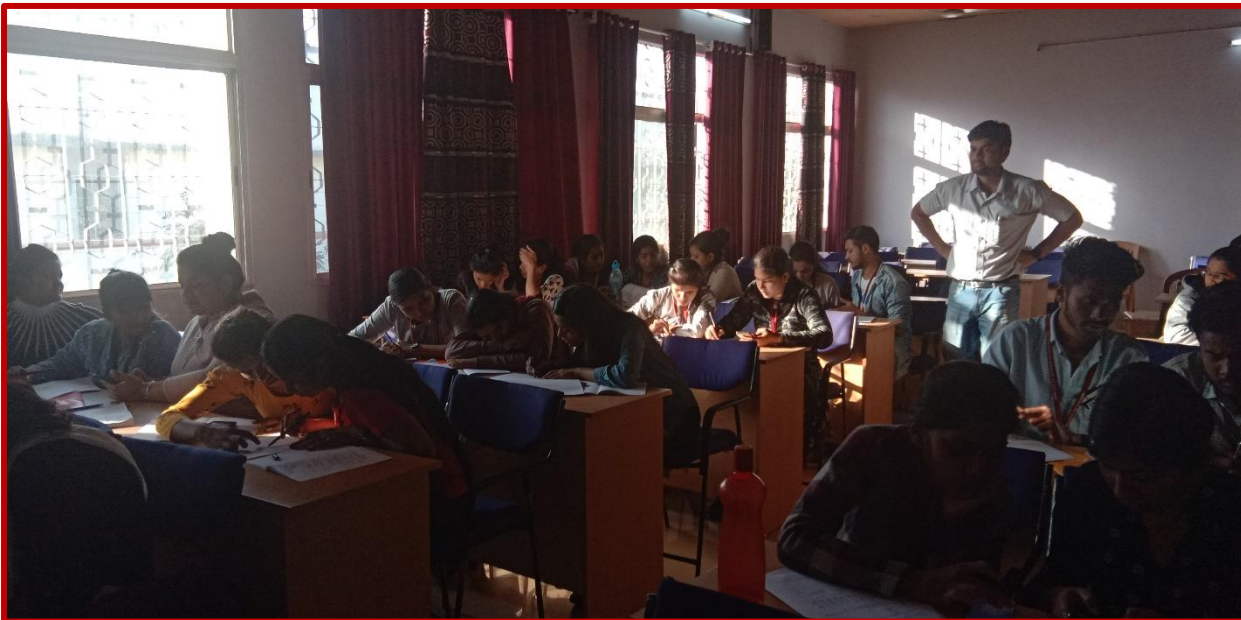
Day 1: Lecture on Biostatistical Tools



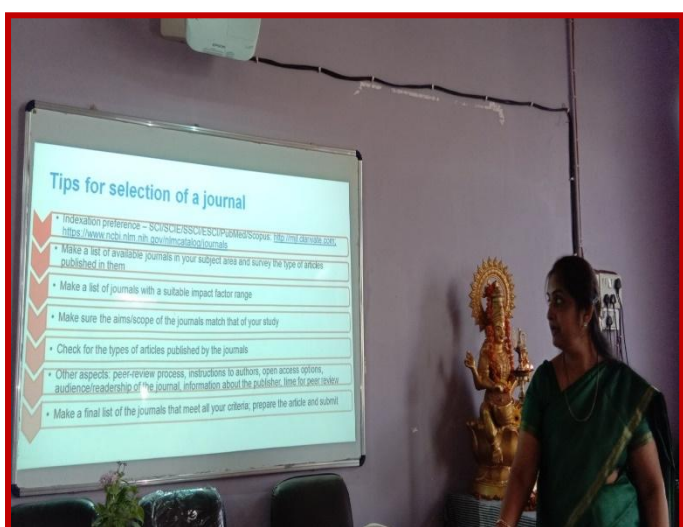
Day 1: Demonstration on Case Study and Central Limit Theory

Day 2: Concept of Bioinformatics

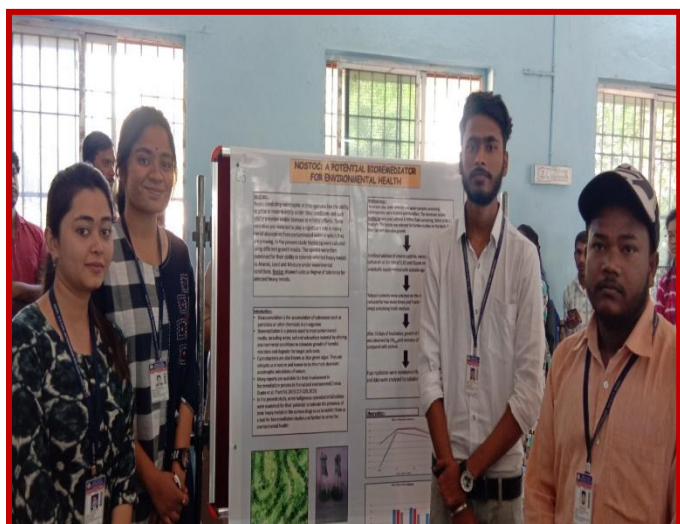




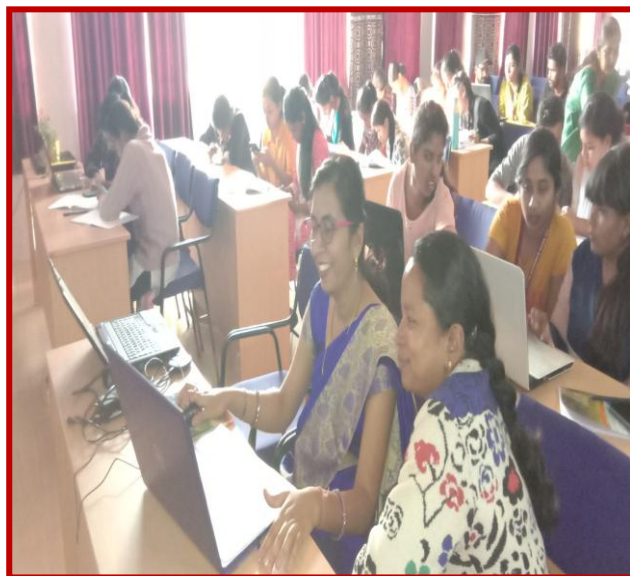
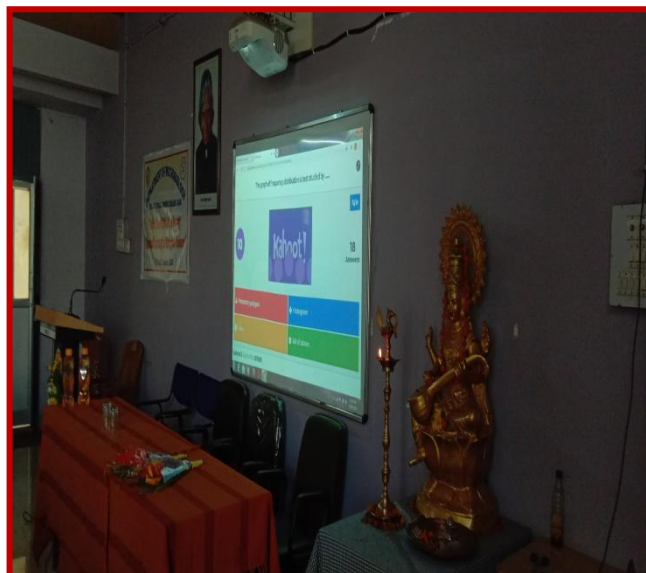
Day 3: Research Publication, Matrices and Plagiarism Checking



Day 4: Learning through Quiz and Posters



Day 5: Molecular Techniques



Day 6: Industrial Visit - ABIS Dairy Rajnandgaon

