MALAVIYA MISSION TEACHER TRAINING CENTRE
(Formerly known as Human Resource Development Centre)
Pt. Ravishankar Shukla University, Raipur

Online Refresher Course in Life Science

January 29 to February 13, 2024

Report

Name of Course/Program:	**Online Refresher Course in Life Science**
Name of Contact person from HRDC:	**Dr. Arvind Agrawal**
Date of Course/Program:	**29.01.2024 to 13.02.2024**
Name of Course Coordinator:	**Prof. S.J. Daharwal** **University Institute of Pharmacy** **Pt. Ravishankar Shukla University, Raipur**
Number of Participants:	**31**
State wise number of participants:	**25 Chhattisgarh, 04 Maharashtra, 01 Bihar and 01 Madhya Pradesh**
No. of Resource Persons:	**37**
Name and Signature of Course Coordinator **Prof. S.J. Daharwal** **University Institute of Pharmacy** **Pt. Ravishankar Shukla University, Raipur – 492 010**	

Organizing Team

Prof. Sachchidanand Shukla
Vice Chancellor,
Pt. Ravishankar Shukla University, Raipur

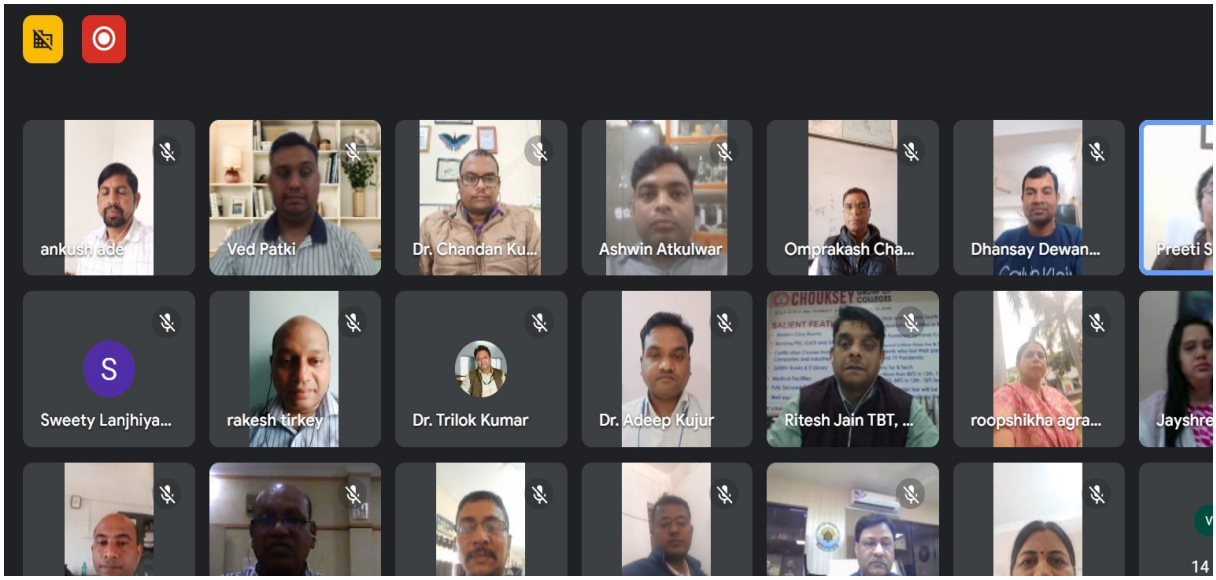
Prof. Preeti K Suhresh
Director,
MMTTC, Pt. RSU, Raipur (C.G.)

Prof. SJ Daharwal
Professor, University Institute of Pharmacy
Pt. RSU, Raipur (C.G.)
Course Coordinator

Dr. Arvind Agrawal
Assistant Professor
MMTTC, Pt. RSU,Raipur (C.G.)
Course Coordinator

ONLINE REFRESHER COURSE IN LIFE SCIENCE (29.01.2024 to 13.03.2024)

Human resource development centre (HRDC), Pt. Ravishankar Shukla university Raipur has organized two weeks Refresher course in Life Science held during **29.01.2024 to 13.03.2024**. On the very first day during the inaugural session the honourable Vice-chancellor Prof. S. Shukla in welcome address gave best wishes for organizing this course. Director, MMTTC Prof. Preeti K Suresh welcomed the honourable Vice chancellor and the participants from various states of the country and wished them for their best performance during the course. The coordinator of the course **Dr. SJ Daharwal,** University Institute of Pharmacy, Pt. Ravishankar Shukla Uiversity, Raipur, C.G., introduced the session with the objectives of the course. He also gave a brief on the various topics to be covered and the resource persons who will join and train the participants. The assistant professors from various central and state universities from all the corners of the country were participated in this course. Most of the participants were from, Chhattisgarh, Maharashtra, Madhya Pradesh, and Bihar. During this two-week refresher course 34 lectures were delivered by 36 subject experts of different fields. Experts from various Places like Mumbai, Delhi, Pune, Nagpur, Sagar, Bhopal, Indore, Bilaspur, Kolkatta, etc. central and state universities as well as two Vice-chancellors were invited to train the college and university teachers. All the experts discussed **Life Science Towards Recent Development**. All the participants were evaluated on their performance in various parameters like micro-teaching, Seminar, project, ending test and holistic response. Prof. A.K. Gupta, Prof. SK Jadhav, Prof. Aditi Poddar and Dr. Renu Maheshwari has judged the micro-teaching, seminar and project respectively.



Detail of date wise organized program

The online Refresher course in Life SCience was organized from 29.01.2024 to 13.03.2024. Various programmes were conducted date wise.

Day 1 (29.01.20204)

On the first day of the Refresher Course at the first session, the inauguration starts with a welcome to Chief Guest honorable Vice Chancellor Prof. S. Shukla, MMTTC Director Prof. Preeti K Suresh, and all the participants by Dr. Arvind Agrawal. after the formal introduction of all the participants, the Course Coordinator Prof. SJ Daharwal introduces a detailed schedule of the entire course. Inaugural Address was given by Vice-ChancellorSir and MMTTC Director Prof. Preeti K Suresh.

In the second session, the first online lecture was delivered by eminent speaker Prof. G.D. Sharma Former Vice Chancellor Atal Bhiari Vajpai University Bilaspur. On the topic NEP 2020. he also explored the importance of NEP 2020.

In the third session lecture was delivered by Dr Sanjay Chauhan Director & Professor Graduate School of Pharmacy Gujarat Technological University Near K6 Circle, Sector 26, Gandhinagar . Fourth Lecture wasdelivered by Prof. K.K. Sahu, Head, SoS in Biotechnology Pt. Ravishankar Shukla University, Raipur (CG)

Day 2 (30.01.2024)

On January 30th 2024, the second day of the refresher course two sessions were conducted. First session started at 10:30 am and invited recourse person Dr. Pratima Gupta , Professor, Department of Biotechnology at NIT Raipur. Dr.Gupta gave very interesting lecture on Sustainable Research and development in Biotechnology. She discussed in detail the Environmental impact, food security and Biofuel , Sustainable research and development in Green Chemistry, Legnin Cellulosic Biomass. Further, she talked about the Case Studies on Sustainable research and development, MECs, Hydrogen production in MEC, waste water treatment, renewable organic compound. The second session of the refresher course started at 12.15 pm. The resource person of the session Dr. Anand Kar , School of Life science Devi Ahilya University Indore ,M.P.. Dr Kar first gave a general overview about the Thyroid . He talked about Thyroid Problem, Prevention and Cure. He gave a detailed lecture on type of thyroid- Hypothyroidism and Hyperthyroidism, symptoms and test of thyroid. He also talked about hypertension, types of hypertension, symptoms, and prevention of hypertension. He talk about herbal for prevention , plant improving thyroid function.He gave a very compressive talk on thyroid problem and prevention. All the participants were present in two sessions of the day. The presentations ended with vote of thanks to the invited speakers.

Day 3: (31.01.2024)

On January 31, 2024, the third day of the refresher course featured two sessions. The Chairperson for the day was Madam Khusboo Khalkho.

The first session commenced at 10:30 am with Dr. Rohit Seth, from the Department of Zoology at Guru Ghasidas Central University, Bilaspur, as the invited resource person. Dr. Seth delivered an engaging lecture on various topics, including Obesity, nutritional deficiency, basic principles in caloric balance, Diabetes, and other theoretical aspects.

Following a tea break, the refresher course resumed at 12:15 pm, with Dr. Rohit Seth once again serving as the resource person. This session focused on the Relevance of Obesity Research in the Present Time. Dr. Seth discussed Physiological needs, Psychological factors, Energy expenditure, Parabiosis experiments, and Faecal Microbial Transplant. Participants actively posed questions, and the presentations concluded with a vote of thanks to the invited speakers.

The second session commenced at 2:15 pm, adhering to the scheduled timetable. Participants presented their micro-teaching using PPT and Whiteboard. Topics such as Neurons structure, Krebs Cycle, Endocrine glands, placentation, somatic hybridization, neuromycocosm, lac-operon, life cycle of butterflies, tissue culture, micro propagation, Water harvesting system and the Medicinal impact of heterocyclic compounds were selected. Total 21 participants took part in second session. Professor A.K. Gupta, the resource person, observed each participant's teaching style attentively and posed questions. The session concluded with the Chairperson expressing gratitude.

Overall, all the sessions were highly informative and interactive. Thanks to MMTTC Raipur and the organizing committee.

Day 4: (01.02.2024)

In the first session, a lecture was delivered by Dr. Ajay Samnthely Pharmaceutical Sciences HNB University, Garhwa, Srinagar he discussed about Swayam and second session wa delivered by Prof. Zenu Jha, Department of Plant Molecular biology and biotechnology, Indira Gandhi krishi Vishwavidyalaya, Raipur on the topic "*Haploids in Crop Improvement : Concept and Applications*". In her lecture, she described about the Breeders that can evaluate DH line with more speed, Trational method Vs Double haploids method and it's Application. Haploid induction- Androgenesis, Gynogenesis and Parthenogenesis. Mega Rice Varieties and its multiple examples, Procedure of anther culture for Haploids & DHs, Microspore stage identification, confirmation of Haploids by Chromosome counting. Through her lecture participants learn about various methods of Crop development especially Rice crop and she also explained the Haploid and Diploid Culture in a very easy and elaborated manner.

Prof. (Dr.) Shailesh Sharma, Amar Shaheed Baba Ajit SinghJujhar Singh Memorial College of Pharmacy BELA (Ropar) . Copyright, as defined by the law, grants creators exclusive rights to their literary, dramatic, musical, and artistic works, as well as cinematograph films and sound recordings. It encompasses a range of rights, including reproduction, communication to the public, adaptation, and translation. The Copyright Act of 1957 safeguards original expressions, not ideas, offering creators minimum protections. Unlike patents, it focuses on preserving tangible creations. Copyright is vital for encouraging creativity, a cornerstone of societal progress. It provides a framework that motivates creators in diverse fields, fostering an environment conducive to innovation and development.

This hands-on training provides a comprehensive guide on filing copyrights, offering practical insights into the process. Participants will gain a clear understanding of copyright fundamentals, including the types of works eligible for protection and the documentation required. The session covers the step-by-step procedure for filing copyright applications, emphasizing hands-on exercises to enhance practical skills. Participants will learn to navigate legal nuances, address common challenges, and optimize their copyright applications. By the end of the training, attendees will be equipped with the knowledge and confidence to effectively file copyrights for their creative works, fostering a stronger understanding of intellectual property rights in the digital age.

Day 5: (02.02.2024)

Dr. Love Kumar Soni School Of Pharmacy Devi Ahalya Viswavidyalaya Takshashila Campus King Road Indore The process of drug discovery and development is a long, tedious and difficult one. Occasionally new drugs are discovered by accident, more frequently they are developed as part of an organized effort to discover new ways to treat specific disease. Today the emphasis is not only just finding new ways to treat human diseases, but also to improve the quality of life in general. The computer aided drug design technique has the ability to accomplish both these goal and to improve the efficiency of the process as well. A question that always remains in mind is that what features of particular small molecule are responsible for its biological activity? Many types of data and theories may be used to probe this question, but the classical answer to question involves molecular dissection called structure activity analysis. QSAR takes the analysis one step further by representing each molecule of series in terms of set of physical, chemical descriptor and examining the correlation of potency with the value of one or more of these physical properties.

On the 5th day of ongoing refresher course in Life Science, the seminar session was held in session III and IV. Dr. Roopshikha Agrawal introduced the resource person Prof. S. K. Jadhav, School of Science in Biotechnology, Pt. Ravishankar Shukla University, Raipur(CG). Participants were called one by one by Dr. Roopshikha Agrawal mam and seminars were taken respectively. Participants presented their seminar on diverse topics viz; Use of Millets,

Biodiversity Conservation, Tissue Culture Technique, Recombinant DNA Technology, Phytoremediation, Climate Change and its effects, Antibiotics and so on. Near about 14-15 participants presented their seminar. Honorable resource person Prof. S. K. Jadhav admired and guided whole participants. He expressed his well wishes for the ongoing refresher course. At the end of session, vote of thanks was proposed by the chairperson Dr. Roopshikha Agrawal mam.

Report compiled by:- Krunal D. Hiwase, Asst. Prof. of Microbiology, Mohsinbhai Zaweri Mahavidyalaya, Desaiganj(Wadsa), Maharashtra.

Day 6: (05.02.2024)

First two session lecture delivered by Prof. A.K. Pati, former Vice Chancellor, GM University, Sambalpur and session III was started with the seminar presentation of remaining participants of this course, followed by session IV. For the evaluation of seminar presentations, Prof. S.K. Jadhav Sir was expert from School of Studies in Biotechnology, Pt. Ravishankar Shukla University, Raipur Chhattisgarh for both the sessions. Chairperson of this session Dr. Adeep Kujur welcomed and introduced today's expert Prof. S. K. Jadhav Sir. After that total 9 seminar presentations were performed. First participant Mr. Surendra Pal Darshan given seminar on topic Life cycle of *Puccinia graminis tritici*, second participant Dr. Namrata Dubey given seminar on topic Important medicinal plants of Chhattisgarh, third participant Dr. Sushma Dubey given seminar on topic Mushroom cultivation, fourth participant Ankush Ade given seminar on topic Neurons structure and types, fifth presentation was given by Neelima Pandey whose seminar topic was Pollination, sixth participant Jayshree Sahu given seminar on topic Colony hybridization, seventh participant Anshita Shukla given seminar on topic Micro encapsulation, eighth participant Mrs. Hemlata Rathore given seminar on topic photosynthesis and 9th participant Dr. Dhananjay Dewangan givan seminar on topic Synthetic strategies for 1,3,4-oxadiazole derivatives. At the end of the session vote of thanks was given by the chairperson.

Report compiled by: Dr. Trilok Kumar, Assistant Professor, Government Digvijay Autonomous P.G. College, Rajnandgaon, Chhattisgarh

Day 7: (06.02.2024)

Prof. Madan M. Chaturvedi Distinguished Visiting Professor, School of Biotechnology, University of Jammu, Jammu & Kashmir, Former Senior Professor, University of Delhi, Delhi

The famous lac-operon model of gene expression is even regulated by the metabolic state of the cell. In the absence of preferred carbon source, such as glucose, the disaccharide lactose activates the synthesis of enzyme b-galactosidases which is responsible of cleaving lactose into galactose and glucose. While in the presence of glucose, through phosphor-enol pyruvate -phosphotransferase system and regulating level of cAMP, inhibits the lac-operon. Therefore, the lac-operon is metabolically highly networked regulated system.

Similarly, in eukaryotes also, such regulation of gene expression is exerted by post-translational modification of histones at the level of chromatin. The modifying enzymes and substrates are metabolically regulated. Core histone consists of a globular domain and an unstructured N- or C-terminus tail. The unstructured tails are frequently the sites for diverse posttranslational modifications (like acetylation, methylation, phosphorylation, ubiquitination, ADP-ribosylation etc). These modifications primarily act as docking sites for binding of further chromatin interacting machineries and occur in an intricate pattern forming the basis of a code called as histone code. Along with DNA methylation they form the basis of epigenetic inheritance.

The concept of "Writer-Reader-Eraser" is now well established in epigenetic regulation of gene expression. These so-called "epigenetic marks" are written by specific enzymes called as "writers". All the histone acetyl transferases (HATs), histone methyl transferases (HMTs), and histone kinases would fall into the class of writers of epigenetic marks. Then, there are "readers" of these marks, as these modifications create docking sites for binding of other regulators. Proteins containing chromo-domains and bromo-domains belong to the class of readers. Subsequently, these marks are removed by the "erasers". Histone deacetylases (HDACs), histone demethylaes would fall into the category of erasers.

The molecules required as cofactors for these modifications, such as ATP, Acetyl CoA, S-adenosyl methionine (SAM) are intermediate products of different metabolic pathways (Krebs cycle, oxidative phosphorylation, amino acid metabolism etc.). Even the enzymes that catalyze the removal of epigenetic marks (erasers) also use cofactors derived from metabolic pathways. Sir2 family of HDACs use NAD as cofactor, LSD1 histone demethylase use FAD as a cofactor and JMjC-domain containing histone and DNA demethylases use F2+ and alpha-ketoglutarate as cofactors. It is now ell-established the different metabolites directly attach to the histones in chromatin and regulate gene expression. Therefore, the chromatin is not only the organizer of DNA in the nucleus, but more so is the direct regulator of gene expression.

I shall discuss the above concepts in detail in my lecture.

Day 08: (07.02.2024)

Dr Jagat Roy has given his lecture on the topic "CELL DIVISION AND CANCER: SPECIAL REFERENCE TO HUMAN PAPILLOMA VIRUS INDUCED CERVIX CANCER". Dr Roy started his lecture by giving an introduction about the chromosome, DNA replication, Transcription and translation simply and interestingly. Then he followed his lecture on genetic disorders/diseases and how mutation are being the major reason for genetic disorders. Dr Roy showed the images of the phenotypic effect of chromosomal mutations in humans and mice. Dr Roy furthered his lecture by explaining the cell cycle and the difference between normal and cancer cells.

Dr Roy has given knowledge on how genetic, epigenetic and environmental factors are responsible for the onset of cancer and also given a brief introduction about retroviruses and viral oncogenes. Dr Roy proceeded his presentation with the influence of growth factors, tumour suppressor genes in controlling cell cycle and cell development and how the mutations in tumour suppressor genes cause cancer especially Retinoblastoma, Adenomatous polyposis. Dr Roy also mentioned the role of the P53 gene in inhibiting the cell cycle, DNA repair and Apoptosis and he differentiated the 3 main types of cancers carcinoma, sarcoma, Leukemia and Lymphoma.

Dr Roy also exposed the HUMAN PAPILLOMA VIRUS (HPV) in causing cervical cancer and the alarming surge of cervical cancer in Indian women. He stated that 7.9% of the women in the general population are affected by this virus particularly the common viruses HPV 16 and HPV 18. Dr Roy mentioned on BRN3A cellular factor and how its mutation causes cancer in the uterine cervix. In the concluding note, Dr Roy suggested cleanliness and vaccination as important preventive measures to check the infection. The session was concluded with the proposal of a vote of thanks by Chairperson of the session.

Day 9: (08.02.2024)

Resource Person: Prof. Aditi Poddar SoS in Life Sciences Pt. Ravishankar Shukla University, Raipur (CG)

Attendance: 32 Participant Present.

On the 10th Day of ongoing Refresher Course in Life Science the session III and IV starts with introduction of resource person introduced by Dr Chandan Kumar Goyal. In the session III and IV Project was Evaluation by Prof. Aditi Poddar of 7 Group respectively. As projects report submitted under supervision of Dr Arvind Agarwal MMTTC Pandit Ravishankar Shukla University. In her evaluation, Prof Aditi Poddar enlightened the participants about project report and project proposal necessity, requirements and Project outcome. At the end of project presentation, query session was conducted and lastly followed by vote of thanks. And the list of the participate with project tittle are as follows:

S.no.	Group Detail	Title of the Project
1	1. Dr Chandan Kumar Goyal 2. Mr. Hit Narayan Tandan 3. Mr. Ajay Raj Singh Rathore	Study of Synergistics effect of Terminalia arjuna bark and Nigella sativa seed on Type -II diabetic albino rats.
2	1. Dr Ashwin Raju Atkulwar 2. Dr Ved Ramesh Patki 3. Dr Ankush Ade 4. Dr. Prasanna Joshi	Molecular species identification of Scarabinae beetles (Coleoptera Scarabaeidae) using DNA barcodes.
3	1. Mr. Omprakash Chande 2. Ms. Khushboo Khalkho 3. Mr. Surender Pal	To study Invasive and Alien species.

4	1. Dr Gireesh Kumar Singh 2. Ms. Rashnita Sharma 3. Ms. Anshita Shukla	Exploring potential Geoprotector by targeting validate bio markers of aging a preclinical study.
5	1. Dr Trilok Kumar 2. Dr Sonal Mishra 3. Miss Neelima Pandey **4.** Dr Majid Ali	Survey of some important medicinal plant of Raman Rajnandgaon Chhattisgarh.
6	1. Dr Roopshikha Agarwal 2. Dr Veenu Joshi 3. Smt Namarata Dubey	Medicinal Herbs for the Managements od Diabetes.
7	1. Mr. Rakesh Tirkey 2. Dr Dhansay Dewangan 3. Mr Adeep Kujur	Herbs with anti-inflammatory potential.

Report compiled by-Khushboo Khalkho, Assistant Professor, Department of Botany, Nayak Nityanand Sai Govt College Aara.

Day 10: (09.02.2024)

Dr. Vandan Garg speaked about the techniques of Crude Drug extraction. She informed the participants about various methods of extraction of drug compounds form plant sources. She discussed numerous factors that affect the extraction process like nature of drug, nature of extracting solvent, solvent temperature, etc. The speaker compared the yield percentage obtained by different extraction methods like Microwave extraction and conventional procedures. Participants shared their views and discussed various aspects of herbal metabolites extraction.

Prof. Anjana Sharma discussed the basic technology of recombinant DNA technology which can lead to genetically modified organism formation. She told the methods of transformation like microinjection and electroporation. Successful GMOs like Transgenic Fish, Sheep were quoted as example with the procedure of their formation. Various advantages and disadvantages of use of GMOs were discussed. At the end participants interacted about various case studies and regulations imposed on using GMOs.

Day 11: (12.02.2024)

CRISPR cas has become a household name these days—the recent award of the Nobel prize in Chemistry to Drs. Emmanuelle Charpentier and Jennifer Doudna highlight how much the concept of CRISPR cas based genetic engineering is likely to impact society. The CRISPR cas story, however, did not evolve overnight. Decades of painstaking research to understand

how acquired immunity functions in bacteria have led to this new development. CRISP-Cas is, however, not just about gene editing. It is an example of the complicated relationship that exists between bacteria and their viruses. A kind of arms race is going in nature between bacteriophages and their viruses. This process ensures the stability of the microbial environment that surrounds us. It is also remarkable that adaptive immunity is not associated with higher living forms alone; the tiny bacteria can also undergo immunization against its adversaries. The diversity of the CRISPR systems and the CAS proteins associated with them is mind-boggling. How these proteins evolved, why there is so much variety are questions that baffle us. The CRISPR system is also an excellent example of Lamarckian evolution. The environment, the virus, in this case, is acting not merely by exerting selection pressure but also by directly inducing the evolutionary change. The future of CRISPR cas is replete with possibilities. Apart from the gene-editing aspect, the basic science associated with CRISPR is fascinating.

Day 12: (13.02.2024)

Last day lecture delivered by Ashwini Kumar Dixit, Professor, Department of Botany , Guru Ghasidas Central University, Bilaspur and Prof. Umesh K Patil, Dept. of Pharmaceutical Sciences School of Engineering & Technology, Dr.HS Gour University, Sagar

VALEDICTORY FUNCTION

The Valedictory function was started at 5 pm in the esteemed presence of honourable vice chancellor Prof. S. Shukla, Director Prof. Preeti K Suresh and Course co-ordinator Prof. SJ Daharwal. In the valedictory session the honourable vice-chancellor Prof. S. Shukla, blessed the session and wished the organisers for successful completion of the course. Director Prof. Suresh wished all the participants foe their excellent academic career. Three participants three participants gave feedback on the entire course. The final report was presented by the co-ordinator Prof. SJ Daharwal. Dr. Arvind Agarwal, Assistant Professor, MMTTC gave the vote of Thanks.

UGC - MMTTC, PRSU, Raipur

Time Table: Refresher Course in Life Science

(29.01.2024 to 13.02.2024)

Refresher Course in Life Science (29.01.2024 to 13.02.2024) UGC-MMTTC Pt. Ravishankar Shukla University, Raipur 492 010, Chhattisgarh							
Day/ Date	**Session -I (10:30 to 12:00)**		**Session -II (12:15 to 13:45)**		**Session -III (14:15 to 15:45)**		**Session –IV (16:00 to 17:30)**
Day 01 29.01.2024	**Registration Inauguration Induction**	Tea Break	**Lecture-1** **Prof. G.D. Sharma** Vice Chnacellor University of Science and Technology, Meghalaya gduttasharma@yahoo.co.in	Lunch Break	**Lecture-2** **Dr Sanjay Chauhan** Director & Professor Graduate School of Pharmacy Gujarat Technological University Near K6 Circle, Sector 26, Gandhinagar Mob 9427614966 Email: prof_sanjay_chauhan@gtu.edu.in	Tea Break	**Lecture-3** **Prof. K.K. Sahu** Head, SoS in Biotechnology Pt. Ravishankar Shukla University, Raipur (CG)
Day 02 30.01.2024)	**Lecture-4** **Dr. Pratima Gupta** **NIT, Raipur**		**Lecture-5** **Thyroid problems: their prevention and cure** **Prof. Anand Kar** **School of Life Science** **Devi Ahilya University, Indore**		**Lecture-6** **High Blood Pressure to Hypertension and Heart attack: Can we prevent it** **Prof. Anand Kar** **School of Life Science** **Devi Ahilya University, Indore**		**Lecture-7** **Prof. Satish B. Verulkar**, Head, Dept of Plant Molecular Biology & Biotechnology, Indira Gandhi Krishi Vishwavidyalaya, Raipur (C.G.)
Day 03 (31.01.2024)	**Lecture-7** **Dr. Rohit Seth** Department of Zoology Guru Ghasidas Central University, Bilaspur rohitseth123@gmail.com		**Lecture-8** **Dr. Rohit Seth** Department of Zoology Guru Ghasidas Central University, Bilaspur rohitseth123@gmail.com		**Micro Teaching** **Prof. A.K. Gupta** Former Professor SoS in Life Science Pt. Ravishankar Shukla University, Raipur (CG) akguptarsu@gmail.com		**Micro Teaching** **Prof. A.K. Gupta** Former Professor SoS in Life Science Pt. Ravishankar Shukla University, Raipur (CG)) akguptarsu@gmail.com
Day 04 01.02.2024)	**Lecture-09** **Dr. Ajay Samnthely** Pharmaceutical Sciences, HNB University, Garhwa, Srinagar semaltyajay@gmail.com; ajay.semalty@hnbgu.ac.in 9412964614		**Lecture-10** **Dr. Zenu Jha** Dept of Plant Molecular Biology & Biotechnology, Indira Gandhi Krishi Vishwavidyalaya, Raipur (C.G.) jhazenu@gmail.com		**Lecture-11** **Dr. Shailesh Sharma** Professor and Director Amar Shaheed Baba Ajit Singh Jujhar Singh Memorial College of Pharmacy (An Autonomous College) BELA (Ropar) Punjab140 111 shailesh.bela@gmail.com 9888775589		**Micro Teaching** **Prof. Renu Maheshwari** Department Zoology Govt. N. Science College, Raipur

Day 05 (02.02.2024)	**Lecture-12** **Dr. Meenaskhi Sinha** Department of Physiology AIIMS, Raipur manishabsinha@gmail.com, manishab80@gmail.com		**Lecture-13** **Dr. Love Kumar Soni** School Of Pharmacy Devi Ahalya Viswavidyalaya Takshashila Campus King Road Indore loveksoni@gmail.com 9425034711		**Seminar (1-9)** **Prof. S.K. Jadhav** ,SoS in Biotechnology Pt. Ravishankar Shukla University, Raipur (CG)		**Seminar (10-18)** **Prof. S.K. Jadhav** ,SoS in Biotechnology Pt. Ravishankar Shukla University, Raipur (CG)
Day 06 (05.02.2024)	**Lecture-14** **Prof. A.K. Pati** Former Vice Chancellor GM University, Sambalpur akpati19@gmail.com		**Lecture-15** **Prof. A.K. Pati** Former Vice Chancellor GM University, Sambalpur akpati19@gmail.com		**Seminar (19-26)** **Prof. S. K. Jadhav** SoS in Biotechnology Pt. Ravishankar Shukla University, Raipur (CG)		**Seminar (27-34)** **Prof. S. K. Jadhav** SoS in Biotechnology Pt. Ravishankar Shukla University, Raipur (CG)
Day 07 06.02.2024)	**Lecture-16** Dr. Thakur Gurjeet Singh Dean, Chitkara College of Pharmacy Chitkara University, Punjab. gurjeetthakur@gmail.com 9815951171	**Tea Break**	**Lecture-17** **Prof. Madan Mohan Chaturvedi** Deparment of Zoology University, Delhi mchaturvedi@zoology.du.ac.in Madan.chaturvedi@gmail.com	**Lunch Break**	**Lecture-18** **Prof. Naveen G. Kango** Head, Dept. of Microbiology, Director-Academic Affairs Dr. Harisingh Gour Vishwavidyalaya, Sagar (M.P.)	**Tea Break**	**Lecture-19** **Dr Harit Jha** Department of Biotechnology Guru Ghasidas Central University, Bilaspur harit74@yahoo.co.in Contact No.-6263627667
Day 08 (07.02.204)	**Lecture-20** **Prof. Swarnlata Saraf** University Institute of Pharmacy Pt. RSU, Raipur		**Lecture-21** **Dr. Munish Ahuja** Department of Pharmaceutical Sciences, Guru Jambheshwar University of Science & Technology, Hisar – 125 001 +91-1662-263515, +91-94164-52469 munishahuja17@yahoo.co.in		**Lecture-22** **Prof. Jagat Roy** Dept. of Zoology, BHU, Varanasi jkroy@bhu.ac.in		**Lecture-23** **Prof. Papiya Bigoniya** Freelance Toxicology & Regulatory Consultant London, UK P_bigoniya2@hotmail.com
Day 09 (08.2024)	**Lecture-24** **Prof. Dinesh Chandra Sharma** Dept. of Zoology KM Govt. Girls PG College, Badlapur GB Nagar dr_dineshsharma@hotmail.com		**Lecture-25** **Prof. Anjana Sharma** Former Professor Department of Microbiology Rani Durgavati Universirty, Jabalpur		**Project (Group 1-4)** **Prof. Aditi Poddar** SoS in Life Sciences Pt. Ravishankar Shukla University, Raipur (CG) adinpod@gmail.com		**Project (Group 5-7)** **Prof. Aditi Poddar** SoS in Life Sciences Pt. Ravishankar Shukla University, Raipur (CG) adinpod@gmail.com

Day 10 (09.02.2024)	**Lecture-26** **Dr. Vandana Garg** Department of Pharmaceutical Sciences M.D. University, Rohtak. vandugarg@rediffmail.com 9896712222		**Lecture-27** **Anjana Sharma** Former Professor Department of Microbiology Rani Durgavati Universirty, Jabalpur		**Lecture-28** **Dr. Sanyog Jain** NIPER, Mohali sanyogjain@niper.ac.in ; sanyogjain@rediffmail.com		**Project (Group 8-11)** **Prof. Aditi Poddar** SoS in Life Sciences Pt. Ravishankar Shukla University, Raipur (CG)
Day 11 (12.02.2024)	**Lecture-29** **Dr. Keshav Kant Shu** School of Biotechnology, Pt. Ravishankar Shukla University, Raipur		**Lecture-30** **Dr. Sushma Talagrakar** DPSRU, New Delhi stalegaonkar@dpsru.edu.in		**Lecture-31** **Prof. Irfan Ahmad Ghazi** Department of Plant Science, School of Life Sciences University of Hyderabad irfan@uohyd.ac.in; drirfang@gmail.com 9908160808		**Lecture-32** **Sujoy Kumar Das Gupta**, Emeritus Scientist Dept. Of Microbiology Bose Institute, Kolkata sujoy@jcbose.ac.in; sujoy50@hotmail.com, sujoydasgupta6@gmail.com 9830227751(M)
Day 12 (13.02.2024)	**Lecture-33** **Ashwini Kumar Dixit** Professor Department of Botany Guru Ghasidas Central University, Bilaspur Email - dixitak@live.com		**Lecture-34** **Prof. Umesh K Patil** Dept. of Pharmaceutical Sciences School of Engineering & Technology Dr.HS Gour University, Sagar umeshpatil29@gmail.com 9425172165		**VALEDICTORY**		

Assessment Criterion and Marking:

Multiple-choice objective tests:	30
Seminars / participant presentation:	15
Project / survey / others:	20
Micro-teaching / participation:	10
Holistic response:	25
Total:	100

Grading pattern (based on Marks)

A+ : 85 percent and above

A : 70 percent to less than or equal to 84 percent

B : 60 percent to less than or equal to 69 percent

C : 50 percent to less than or equal to 59 percent

F : Below 49 percent

Those teacher participants who score F grade are required to repeat the program after a gap of one year without financial commitment to UGC-HRDC.

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