Department of Biochemistry & Nutrition
2024-25

Skill development programme on

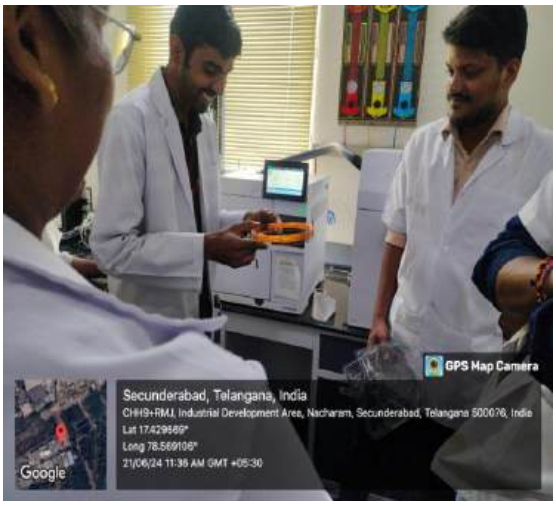
Advanced Bioanalytical techniques

In collaboration with Accu Analytical, IDA, Nacharam, Hyd.

20th & 21st June, 2024

The Department of Biochemistry & Nutrition organised a skill development programme on "Advanced Bioanalytical Techniques" in collaboration with Accu Analytical, IDA,Nacharam, Hyd on 20th and 21st June, 2024 for students of M.Sc Biochemistry, Sem II. The programme started with a brief address by Mr.Shekhar Reddy, Managing Partner, Accu Analytical, Hyd. He briefed the students about the opportunities in pharma labs and gave an overview of the analytical methods performed at Accu Analyticals. The students were taken to NMR lab and explained the sample preparation, type of sample, instrumentation and data analysis. The students then visited the GC lab and were explained the working of the GC. The resource persons also shown the GC columns and the data analysis. They were then explained the working of the HPLC and detailed the types of HPLC columns. The resource person also showed the students the LC-MS system, explained the working of the LC-MS system and calculation of the mass of the molecules. A total of 31 students along with two faculty members, Dr.S.Padma and Dr.S.Manju Devi accompanied the students for the programme. The skill development program was a good learning experience for the students.

Demonstration at NMR LAB



Resource persons at Accu analytical demonstrating GC and HPLC Instruments to M.Sc students

“Millet Lunch Box”

18th June to 24th June, 2024

The Department of Biochemistry & Nutrition, Bhavan’s Vivekananda College, Sainikpuri, has conducted “Millet Lunch Box” to elevate the usage of millets, under the Sustainable Development Goal Activity (Ensuring good health and well-being) 2024. “Millet Lunch Box” is an event where students and staff were asked to bring recipes made of millets in their lunch box daily for one week, scan the picture and upload in the link given. Students and staff from all the departments of the college have participated including various recipes in their lunch box.

The event emphasized on the practice of millet usage in daily cooking and creating awareness of different millets available locally which can be cooked into delicacies. Addition of millets enhances the nutrient value of the recipes along with bringing an awareness that health and taste can coexist. A total of 22 participants, both staff and students, have included millets in their daily lunch box.

Jowar Idli and Jowar Uttapam by Mrs. Niraimathi

Millet Utappam by Mrs. Kalyani Gotri

Millet Pongal by Mrs. V. Revathi

Buckwheat Puri by Ambika Gupta

Millet Kichidi by Sai Jyothi

Kodo Millet Tikki by Ashmitha

Jowar Almond Honey Milk
by Kavyasri

Bajra roti and moringa dal
by B. Pooja Sri

Barn yard Millet Cutlet
by K. Varsha

Ragi Beet root smoothie
by R. Madhu

Paneer Ragi Dosa –
by K. Naga Jyothirmayi

Ragi Mudda and tomato chutney
by K. Jashmitha

Jowar, banana, and raisin smoothie
By M. Sashi Varshan

Jowar roti, Moringa dal and
beet root curry by P. Hemalatha

Oats and dates porridge
by M. Jayanth Giri

Barley Porridge by Vamika Anil

List of participants

S.No.	Name of the Participant	Class of the student participants / Name of the Department for faculty	Name of the Recipe	Name of the Millet used
1	Mrs. B. Niraimathi	Asst. Prof. Physics, IQAC coordinator	Jowar idli, coconut chutney and sambar	Jowar
2	Kalyani Gorti	Asst. Prof., Commerce	Millet Kitchdi	Foxtail Millet
3	Mrs. V. Revathi	Asst. Prof., Nutrition	Millet Pongal	Kodo millet
4	Ambika Gupta	BSC BCNDC 2nd Year III Sem	Buckwheat Puri	Buckwheat Millet (Kuttu flour)
5	K N. Jyothirmai	B.Sc. BINDC 2nd Year III Sem	Millets kichidi	Kodo millet
6	Mrs. B. Niraimathi	Asst. Prof. Physics, IQAC coordinator	Jowar uttapam	Jowar
7	Mrs. V. Revathi	Asst. Prof., Nutrition	Millet Dosa	Barnyard millet
8	M.Asmitha	B.Sc. BINDC 2nd Year III Sem	Kudo millet tikki	Kudo millet
9	Kalyani Gorti	Asst. Prof., Commerce	Ragi idli	Finger Millet
10	Kalyani Gorti	Asst. Prof., Commerce	Millet Uthappam	Foxtail Millet
11	Soha Naaz	B.Sc. BINDC 2nd Year III Sem	Ragi cookies	Ragi
12	Mrs. V. Revathi	Asst. Prof., Nutrition	Millet puri	Bajra/Pearl millet
13	P. Kavyasri	B.Sc. BINDC 2nd Year III Sem	Jowar Almond Honey Milk	Jowar
14	B. Pooja Sri	B.Sc. BINDC 2nd Year III Sem	Bajra roti and moringa dal	Bajra/Pearl millet
15	Kanaka Varsha	B.Sc. BINDC 2nd Year III Sem	Barn yard Millet Cutlet	Barn yard millet
16	R. Madhu	B.Sc. BINDC 2nd Year III Sem	Ragi Beet root smoothie	Ragi
17	K. Naga Jyothirmayi	B.Sc. BINDC 2nd Year III Sem	Paneer Ragi Dosa	Ragi
18	K. Jashmitha	B.Sc. BINDC 2nd Year III Sem	Ragi Mudda and tomato chutney	Ragi
19	By M. Sashi Varshan	B.Sc. BINDC 2nd Year III Sem	Jowar banana, and raisin smoothie	Jowar

20	P. Hemalatha	B.Sc. BINDC 2nd Year III Sem	Jowar roti, Moringa dal and beet root curry	Jowar
21	M. Jayanth Giri	B.Sc. BINDC 2nd Year III Sem	Oats and dates porridge	Oats
22	Vamika Anil	B.Sc. BINDC 3nd Year V Sem	Barley Porridge	Barley

Report on
Hands on Training in "Protein Purification"
Department of Biochemistry & Nutrition,
DBT Star College Scheme
20 -07 -2024 to 28 -09-2024

The Department of Biochemistry & Nutrition successfully organized hands-on training focused in "Protein Purification" under the DBT Star College scheme for B.Sc III year BCNDC, MiGC and BTGC students from 20 -07 -2024 to 28 -09-2024 (30 hrs). The course aimed to provide practical exposure and in-depth knowledge to undergraduate students about protein purification techniques and create employment opportunities in pharmaceutical industries and biotech labs. A Total of l8 students from B. Sc III year BCNDC, MiGC and MBGCC participated in the training program with three resource persons Dr. S. Padma, Assistant Professor, Dr. S. Vanitha, Assistant Professor, and Dr. Kamala Golla, Assistant Professor, Department of Biochemistry & Nutrition.

The training began with a brief introduction to the importance and applications of Proteins and in bio-analytical techniques by Dr. A. Sai Padma, Head, and Dr. S. Padma, Assistant Professor, Department of Biochemistry & Nutrition.

Students with practical expertise in key techniques, including Protein Isolation, Protein Precipitation, Gel Filtration Chromatography, Affinity Chromatography, Native PAGE, and SDS PAGE.

Students were trained in techniques for extracting enzymes from various biological samples while preserving their structural and functional integrity. They gained hands-on experience in sample preparation and optimization for efficient protein recovery. The training focused on methods such as Ammonium Sulphate Salt Precipitation, enabling the concentration and partial purification of enzymes from complex mixtures, followed by Dialysis and Ion-Exchange Chromatography using DEAE Cellulose 52 Resin. Enzyme assays were conducted, and protein content was estimated using Lowry's Method. The purification process was analyzed and compared through SDS-PAGE, providing participants with a comprehensive understanding of enzyme purification and characterization techniques.

Training sessions also covered the technique of Affinity chromatography in separating and purifying biomolecules like immunoglobulin G (IgG) from the serum sample based using Protein A column.

The Department of Biochemistry & Nutrition through these training sessions, has significantly contributed to the skill development of students which is under the DBT Star College Scheme.

Dr. S Padma explain experimental protocols to Students and they performing experiments

Dr A. Sai Padma along with Students

Dr. G.S.R.K Choudary, Principal distributing certificates to students along with faculty members

Department of Biochemistry & Nutrition

Report on Outreach Program at ZPHS for Girls, Alwal

13" August 2024

The Department of Biochemistry & Nutrition has organized an outreach program for High School students of ZPHS for Girls, Alwal on 13 August 2024. The I year M.Sc Biochemistry and III year B.Sc BINDC students of the department along with faculty members have participated in the outreach program. High school students of class IX and X were benefited from the outreach program.Various models and charts were displayed to the students and models of the process of respiration, digestive system, and circulatory system were explained enthusiastically by UG students of the college to the school students. Experiments including isolation of DNA from Banana, Different stages in Meiosis observed under microscope, Differential leukocytes count, specificity of amylase enzyme activity, catalase activity from spinach and detection of food adulteration in milk, spices and wheat flour were explained and demonstrated to the school students. The outreach program has received good response and well appreciated by the students and staff of the school.

PG Students explaining experiments to X & IX class School children.

UG Students explaining experiments to X & IX Class School children.

PG & UG students along with School teachers, Dr. S Padma & Dr. Kamala Golla

Educational Visit to Atal Incubation Centre-CCMB

Objective - To explore entrepreneurship ideas in life sciences, startups in Health, Pharmaceuticals and Biotechnology as well as to gain insights into innovations in biotechnology sector.

Date of Visit: 14-08-2024, Wednesday

Participants: students of M.Sc. Biochemistry III semester.

On the 14th of August,2024, the Institution and Innovation Council of Bhavan's Vivekananda College of Science, Humanities and Commerce in association with Department of Biochemistry & Nutrition organised an educational visit to Atal Incubation Centre at the Centre for Cellular and Molecular Biology (AIC-CCMB), Hyderabad. The M.Sc. Biochemistry students of the college with faculty member Dr. Manju Devi. S visited the incubation centre. The visit commenced at 10:30 AM, with the group being warmly welcomed by Ms. Jerusha, a representative of AIC-CCMB.

The visit began with an introductory video about AIC-CCMB, which highlighted the center's mission to support startup companies in science and technology. AIC-CCMB provides these startups with a conducive environment for incubation, offering access to state-of-the-art instruments, mentorship, and technical assistance to help them develop and commercialize their innovative ideas.

Dr. Ramjee Pallella, the Chief Operating Officer of AIC-CCMB, delivered a welcome address, providing an overview of the incubation facility. He shared examples of successful startups that have been nurtured at AIC-CCMB, including those working on:

- CAR-T cell therapy
- Animal vaccines
- AI/ML data algorithms for genomics and diagnostics
- Artificial sweeteners
- Solutions for the white spot syndrome in agriculture
- Water purifiers
- Stem cell research focused on PRPP (Phosphoribosyl Pyrophosphate)

Ms. Rithika addressed the students on entrepreneurship, emphasizing the importance of identifying and filling gaps between customer needs and existing solutions. She also discussed the risks involved in entrepreneurship and how AIC-CCMB helps mitigate these risks by providing a supportive environment for startups.

Ms. Jerusha explained about various student-centric fellowships offered by Department of Biotechnology for start-ups and entrepreneurship. She also outlined the steps involved and described how AIC-CCMB supports each stage. She highlighted on the following programs:

1. **SPARSH - Social Immersion Young Program:**
   - Encourages young minds to explore innovative ideas.
   - Mentorship is provided even for those who initially have no clear idea.

2. **BFI - Biome Fellowship:**
   - Focuses on executing projects that have a significant societal impact.
   - Participants are expected to develop a Proof of Concept (POC) by the end of the fellowship.
   - Opportunity to pitch ideas to potential investors.

Mr. Shravan, another member of AIC-CCMB detailed about two additional programs:

1**.TIDE 2.0 Program:**
   - An initiative by the Ministry of Electronics and Information Technology (MeitY).

- Supports startups in the Information and Communication Technology (ICT) domain.
- Focuses on emerging technologies like AI, IoT, and blockchain.
- Provides financial assistance, mentorship, access to advanced infrastructure, and networking opportunities.
- Aims to foster innovation with significant societal impact.

2. **NIDHI PRAYAS Program:**
- Designed to support budding entrepreneurs in transforming their innovative ideas into prototypes.

- Targets aspiring innovators and startups at the idea-to-prototype stage.
- Provides financial support, mentorship, and access to prototyping facilities.
- Aims to bridge the gap between the idea and proof-of-concept stages, encouraging entrepreneurs to bring their concepts closer to market readiness.

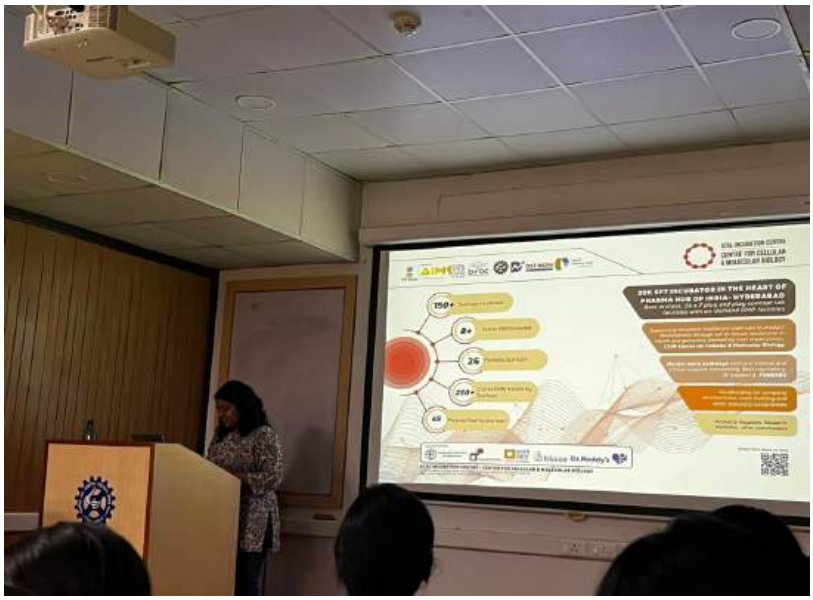
To assess the students' understanding of the content presented, a quiz was conducted, ensuring active participation.
Later, students were given a guided tour of the AIC-CCMB campus. They visited various labs where startups are stationed, gaining firsthand experience of the incubation environment and the cutting-edge research being conducted at the facility.

The visit to AIC-CCMB was highly informative and provided the students with valuable insights into the world of science and technology startups. The sessions conducted by the AIC-CCMB team inspired the students and provided them with a deeper understanding of the entrepreneurial ecosystem. The exposure to various programs and fellowships offered by AIC-CCMB highlighted the opportunities available to young innovators and entrepreneurs.

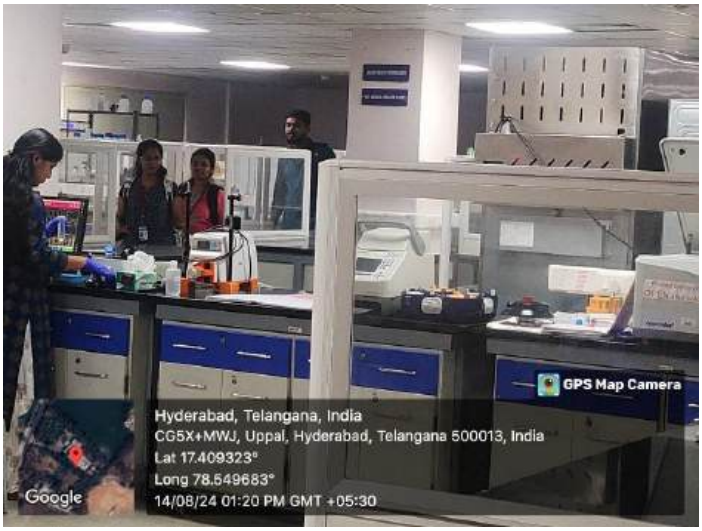
The visit concluded with a sense of enthusiasm among the students, many of whom expressed interest in exploring entrepreneurship in the future.

Dr. Ramjee Pallella, COO, AIC -CCMB interacting with students.

Students and Faculty attending the sessions at AIC-CCMB.



Ms. Jerusha, AIC team member explaining about various start-up programmes



Lab tour of AIC-CCMB.

Students and faculty with AIC- CCMB team

Department of Biochemistry & Nutrition

Health Camp-2024

21st and 22nd of August, 2024

The Medical & Health Committee of BVC in association with the Department of Biochemistry & Nutrition organized a health camp for the teaching, non-teaching staff and students of BVC on 21st and 22nd of August, 2024. The health camp was in association with Vimta Labs, Hyderabad. The list of tests in the health camp included Master Health checkup, Complete Health checkup, Extended Health checkup panel, Diabetic screening profile and Sunshine vitamin screening panel. It also included tests like complete blood picture, HbA1c, fasting blood glucose, lipid profile, thyroid profile, calcium, Vitamin D, B_{12} levels and other tests as requested in person.

A total of 60 teaching and non-teaching staff from the college from various departments have got their various parameters evaluated. There were 33 students who got their CBP, hemoglobin and thyroid profiles checked while 27 staff members got their Master Health Check that has a list of tests, vitamin D profile, diabetic screening, complete blood profile etc., which are done to take care of overall health. Rest of the staff and students have got tested for profiles like Complete Health Checkup, Sunshine vitamin screening, hemoglobin, and HbA1c levels. Overall, the health camp received a good response from staff and students and was well appreciated.

Teaching and nonteaching staff participating in the Health Camp

Students participating in the Health Camp

Family members of Staff participating in the Health Camp

Staff of Department of Biochemistry & Nutrition along with Vimta Labs at the health camp

Medical & Health Committee along with Vimta Labs at the health camp

Department of Biochemistry & Nutrition

Report on Value added course (2024- 25)

Hands on training in "Molecular Biology and Cell Culture Techniques"

In collaboration with Global Medical Education and Research Foundation, Hyderabad

27th to 31st August, 2024

The Department of Biochemistry & Nutrition organized a five-day value-added course titled Hands-on training in "Molecular Biology and Cell Culture Techniques" as part of skill development in current research-oriented techniques in collaboration with Global Medical Education and Research Foundation (GMERF), Lak-di-ka-pul, Hyderabad. The course was designed to provide the students with practical, hands-on experience in essential molecular biology techniques, a prerequisite in research and diagnostics labs.

A total of 10 students from M. Sc II year Biochemistry (Semester III) has taken up this course that was held from 27th to 31st August, 2024. Students had a complete hands-on training on various molecular techniques like PCR- Conventional, Multiplex- PCR, RFLP (Restriction

digestion), agarose gel electrophoresis, cDNA synthesis, RT-PCR and gained theoretical knowledge on primer designing, gene expression analysis and karyotyping.

On day 1, Dr Prasanna Latha, Senior Scientist gave a brief orientation on the need for the students to learn these molecular techniques. Followed by briefing on good laboratory practices (GLP), handling of miniscule sample volumes, SOPs for isolation of RNA and genomic DNA from biological samples and proper disposal of hazardous wastes. During practical session, students isolated RNA from fresh blood samples. The day concluded with an introduction to karyotyping which was explained by Dr. Upasna Upadhyay, this laid the groundwork for the karyotyping process.

Day 2, students checked the quality of the isolated RNA by agarose gel electrophoresis and prepared the master mix and loaded the RNA samples for cDNA synthesis. Later, students isolated DNA from the blood samples and checked its quality using AGE.

On day 3, Dr. Prasanna, explained principle and applications of conventional PCR, multiplex PCR and RT-PCR. Afternoon session, students performed RT-PCR and analysed the results by visualizing the PCR products under Gel-Doc image viewer. Fourth day, RFLP, a technique to detect genetic variation was performed and results were analysed. Cells cultured on day 1 for karyotyping were processed and were explained how to screen and report the results in the afternoon session.

Final day of the VAC was theory behind Primer designing and tips on how to choose a specific enzyme for RFLP. The session also included an overview of sequencing techniques, rounding out the participants' knowledge of molecular biology tools. The VAC was concluded with a valedictory, where participants received closing remarks followed by a feedback session, where participants could share their experiences and suggestions. The course came to an end with the distribution of certificates, marking the successful completion of the course.

Overall, the value-added course provided valuable, hands-on experience in molecular and cell culture techniques, equipping students with the skills needed for advanced research and diagnostic applications.

Fig 1: Inaugural of the value-added course at GMERF, Day 1, 27/8/2024

Fig 2: Students preparing solutions for the experiment at GMERF, 27/8/2024

Fig 3: Students gaining hands-on experience during the VAC at GMERF, 28/2/2024

Fig 4: Dr Prasanna Latha, Senior Scientist, GMERF explaining to MSc II Year Biochemistry students during the value-added course at GMERF, 28/8/2024

Fig 5: Dr. Prasanna Latha demonstrating the RT-PCR sample preparation and explaining the working principle of RT-PCR, Day 3, 29/8/2024

Fig 6: Resource persons explaining the protocol of RFLP & its importance, Day 4, 30/8/2024

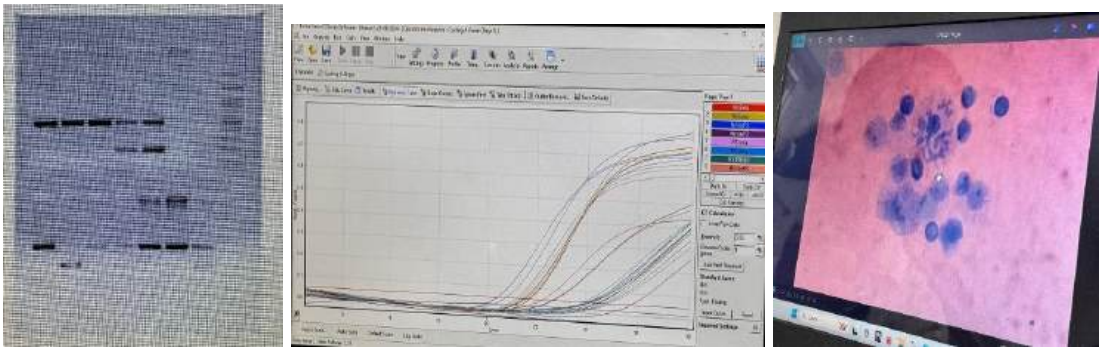


Fig 7: Images of PCR products, RT-PCR result and Karyotyping, Day 4, 30/8/2024

Fig 8: Students receiving participation certificate during valedictory at GMERF, 31/8/2024

Fig 9: Group photo with Dr. Prasanna Latha, Senior scientist, GMERF, Dr. A. Sai Padma, Head, Dept of Biochemistry & Nutrition, BVC at the VAC Valedictory with students and Dr. Upasana and Ms. Bhavya Sri, 31/8/2024

Rashtriya Poshan Maah 2024

13th September, 2024

The Department of Biochemistry & Nutrition of Bhavan's Vivekananda College of Science, Humanities and Commerce has celebrated “Rashtriya Poshan Maah-2024” for the fourth consecutive year on 13th September, 2024, to spread knowledge of nutrition and create awareness among students, staff and community. The theme for the year 2024 was "Nutritious Diet for Everyone”.

The event was inaugurated by Dr. G.S.V.R.K. Choudary, principal, BVC, Dr. A. Sai Padma, HoD, Department of Biochemistry & Nutrition and the guest speaker Dr. B.R. Shamanna, Professor, School of Medical Sciences, University of Hyderabad, Hyderabad. The inaugural session was followed by the guest lecture by Dr. B.R. Shamanna, Professor, School of Medical Sciences, University of Hyderabad, Hyderabad on the theme of the year “Nutritious Diet for Everyone”. He emphasized on the diet plan and daily dietary requirements from newborn to the elderly and stressed on maintaining healthy life style. Prof.Shamanna discussed different programmes initiated by governments to monitor nutrition in pregnant and lactating mothers as well as in the newborns. He concluded his talk by providing career opportunities in nutrition and also encouraged the students to keep themselves appraised about the nutrition policies in India.

As part of the Rashtriya Poshan Maah, intercollegiate events including poster presentation, NutriHunt and Nutrichef were organised. 19 Posters were presented by the students on five highlighted themes – Anaemia, Growth Monitoring, Complimentary Feeding, Poshan Bhi Padhai Bhi and Use of Technology for better Governance. Nutri-Hunt, a treasure hunt was organized which enthralled students. A total of 30 teams from different colleges participated enthusiastically. This was followed with Nutri-Chef, exhibition and sale of nutritious recipes. 21 nutritious recipes were displayed in the stalls by participants of inhouse and other colleges.

The programme concluded with the valedictory session chaired by principal Dr. G.S.V.R.K. Choudary. Winners of all the competitions were announced and appreciated with mementos and certificates. A total of 105 students including students from different colleges Loyola Academy, St. Francis College for Women, St. Ann's College for Women, RBVRR Women's College. The programme was a grand success with enriching sessions and active participation of the students.

Inaugural session and lighting of the lamp

Overview of the Rashtriya Poshan Maah 2024 celebrations by Dr. A. Sai Padma, HoD, Dept. of Biochemistry & Nutrition

Guest lecture by Dr. B. R. Shamanna and presentation of memento

Audience adoring the lecture

Students presenting the posters and being judged by Dr. Naga Manju

Enthusiastic participants taking instructions in Nutri-Hunt

Staff tasting the delicacies at Nutri-Chef

Dr. Shalini Devi Judging the recipes

Winners of poster presentation appreciated with certificates and mementos

Prize winners being awarded at valedictory

Faculty and Student coordinators at valedictory

Guest Lecture
14th September, 2024

The Department of Biochemistry & Nutrition organised a guest lecture on **"Overview of Medical Coding"** on 14th September,2024. The resource persons for the guest lecture were Mr.A.Madhu (Alumnus student- 2004-06) Operations Manager, R1RCM, Hyderabad and Ms. Krishna Satya, Medical coding Trainer, Omega, Hyd.

Alumnus student Mr.A.Madhu gave an introduction to the field of medical coding and explained the terminology of medical coding, the job profile of a medical coder and the scope of medical coding as a job option.

Ms.Krishna Satya explained the different types of certification programmes that the students can complete and enhance the job profile. She also gave an overview of the courses offered to complete certification programme. The students (45 students) interacted well with the resource persons and were given awareness on the pay and career growth in the field of medical coding

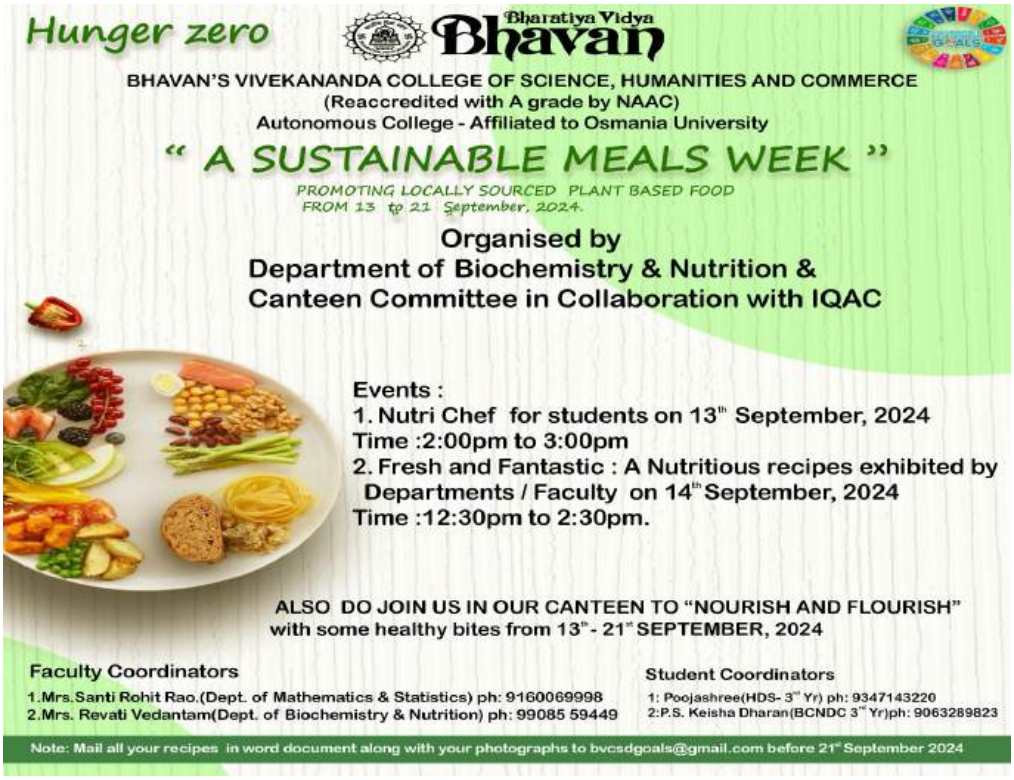
Mr.A.Madhu explaining medical coding

Ms.Krishna Satya explaining certification programe

Students interacting with the resource persons

Dr.A.SaiPadma, HOD, and other faculty members with the resource persons and students

Report on Sustainable Meals Week from 13th -21st September 2024



Introduction

The Sustainable Meals Initiative was launched to promote healthy, environmentally-friendly food choices SDG 2 within our campus .
On 13th September 2024, Nutri Chef Fresh and on14th September 2024 an event titled Fresh & Fantastic was held as part of the "Sustainable Meals Week," an initiative organized by the Department of Biochemistry and Nutrition and the Canteen Committee, in collaboration with the Internal Quality Assurance Cell (IQAC).
The event commenced at 12:30 PM in the college science quadrangle, with faculty members and students showcasing an array of nutritious meals.

Faculty Coordinators:1.Mrs. Santi Rohit Rao (Dept. of Mathematics and Statistics) and
2.Mrs. Revati Vedantam (Department of Biochemistry and Nutrition)

Student Coordinators 1. Pooja Shree (HDS III Yr)
2. P.S.Keisha Dharani (BINDC, B.Sc. IIInd year)

Objectives

The primary Objective of the event was to encourage participants to bring nutritious food items, providing an engaging platform to share health benefits and explore diverse dietary options.

To raise awareness about the impact of food choices on the environment, encouraging participation in sustainable practices, and fostering a sense of responsibility towards educating community through shared culinary experiences.
The importance of sustainable eating cannot be overstated; it contributes to reducing carbon footprints, minimizing food waste, and promoting overall well-being.

Planning and Execution
The planning phase involved collaborative menu creation that prioritized local and seasonal plant based ingredients. We engaged students, faculty, and local canteen chefs to curate a collection of recipes that reflected sustainable practices. Promotional activities included social media campaigns, announcements in classrooms and in assembly and cooking demonstrations in our nutrition lab which helped build excitement and awareness about the initiative.
Activities Conducted during sustainable meals week :

1.Nutri Chef is held at Science Quadrangle on 13 September 2024
Time : 2:00pm to 3:00pm
Nutri-Chef, exhibition and sale of nutritious recipes. 21 nutritious recipes were displayed in the stalls by participants. This event was exclusively for students.

2.Fresh and Fantastic a Nutrition exhibit by Departments/Faculty on 14 September 2024
Time : 12:30pm to 2:30pm is held at Science Quadrangle.

Participation
Over 50 students, faculty, and staff participated in the week's activities. Feedback collected through surveys highlighted a positive reception, with many participants expressing increased knowledge about sustainable eating and a desire to incorporate these practices into their daily routine.

3. "Nourish and Flourish" featuring healthy bites in the canteen from September 13th to September 21st , 2024, with daily notifications
Mr. Praveen (Canteen): Oats cutlet, poha, and Gluten free bread pakoda.
Mr. Janaki Ram(Canteen):Fruit Bowl, Sprouts ,Pesarattu

Impact Assessment
The event created a vibrant atmosphere where students and faculty enjoyed a variety of delicious and health-conscious foods. Attendees were able to explore new recipes and dietary options without compromising on taste or nutrition. Around 1:00 PM, Principal, Dr. G.S.V.R.K. Choudary, Mrs. B. Niraimati IQAC Coordinator , Dr. A Sai Padma HOD Biochemistry & Nutrtion, Dr. K. Anuradha HOD Microbiology, Dr, GS Mini HOD Mathematics & Statistics visited the exhibition, taking time to appreciate the efforts and creativity of participants.

An evaluation of the initiative revealed significant environmental benefits, including a reduction in food waste by approximately 30% during the event. The carbon footprint associated with meal preparation decreased as we focused on plant based local sourcing. Educationally, participants

reported a 70% increase in understanding the principles of sustainable eating, showcasing the initiative's effectiveness.

Challenges and Solutions

Several challenges arose, including initial resistance to changing traditional meal options and logistical issues related to sourcing ingredients. We addressed these to our canteen partners and emphasized about the health and environmental benefits of sustainable eating and also ensured about their availability. As part of our initiative, we collaborated closely with our canteen partners to ensure that plant-based, locally sourced food options were available at least twice a week. This initial commitment aimed to familiarize our students with sustainable eating practices and highlight the benefits of choosing local produce.

Outcomes

The initiative culminated in the creation of a campus-wide cookbook featuring over 15recipes, each accompanied by cultural stories that celebrate our diverse community. Notable recipes include Idiyappam with tomato and coconut mix, Ragi Laddu made with vegan ghee. , Matta rice flakes, Foxtail millet pulao, Millet pizza, Ragi java with barley and almonds, Oats cutlet, poha, Gluten free bread pakoda , Fruit Bowl, Sprouts , Pesarattu and Millet Meal.
Since last year, we have been implementing these initiatives and have noticed an improvement in educating students about sustainable meals and locally sourced food.

Conclusion

The Sustainable Meals Initiative was a resounding success, fostering community engagement and awareness about sustainable food practices. For future events, we suggest expanding the reach by incorporating more interactive workshops and exploring partnerships with local farms to enhance the educational aspect.


SCIENCE BLOC
CHEMISTRY LAB - I
58


GPS Map Camera
Secunderabad, Telangana, India
FGQM+VRV, Defence Colony, Sainikpuri, Secunderabad, Telangana 500056, India
Lat 17.489749°
Long 78.534578°
14/09/24 12:56 PM GMT +05:30
Google


GPS Map Camera
Secunderabad, Telangana, India
FGQM+VRV, Defence Colony, Sainikpuri, Secunderabad, Telangana 500056, India
Lat 17.489776°
Long 78.534546°
14/09/24 12:42 PM GMT +05:30
Google


GPS Map Camera
Secunderabad, Telangana, India
PG BLOCK, BHAVAN'S VIVEKANANDA COLLEGE, Sainikpuri, Secundersbad, Telangana 500094, India
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Long 78.534503°
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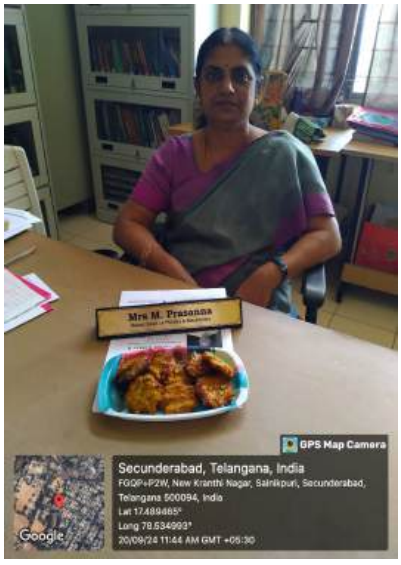
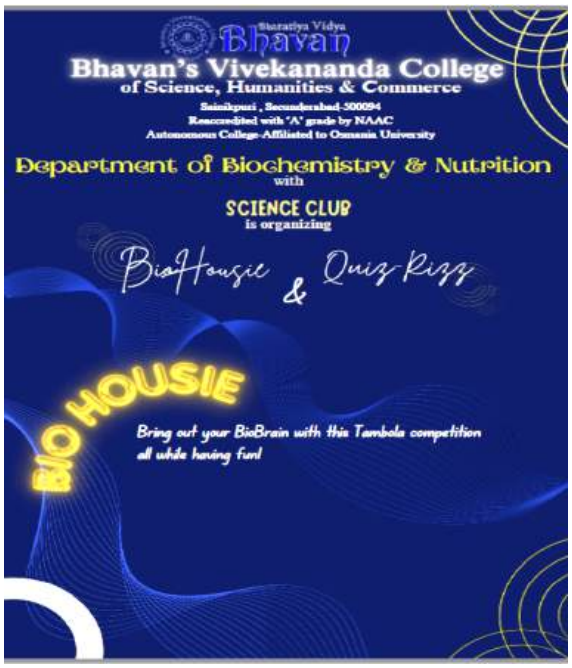


Science Club Activity Report

10-09-2024

The Department of Biochemistry & Nutrition as part of Science club activity has organised an event named as Biohousie and QuizzRizz on Septeber 10th 2024. Biohousie was a tambola competition using life science questions. Quizz Rizz was a quiz competition, to analyse the knowledge of the students on life sciences topics. The program received huge response from students and a total of 59 students participated in the Biohousie program. 39 students participated in the Quizz Rizz program. The winners were given prizes at the end of the program.



Flyer of the event

Students participating in Biohousie program.

Student coordinators interacting with participants

Students participating in Quiz competition

Prize distribution to winners

Field visit

CCMB Open day

25th September, 2024

The students of M.Sc Biochemistry were taken to Centre for Cellular and Molecular biology, (CSIR-CCMB), Tarnaka, Hyderabad for a visit on the Open day on 25th September,2024. The students were briefed about the various labs and the research facilities available at CCMB. The open day provided an opportunity to see equipments like electron microscope, confocal microscope and students were shown images taken using fluorescent microscope. The students were shown around the model organisms lab, Next generation sequencing facility (NGS), Proteomics lab. The students also visited the stalls that explained the ongoing research activities at CCMB. Model organisms like zebra fish were shown to the students. The students interacted with the research scholars and scientists at the institute. A total of 29 students along with two faculty members visited CCMB on the open day.

Students briefed about CCMB

Fluorescent microscopy facility

Students explained about DNA sequencing facility

Proteomics facility at CCMB shown to students

Research scholar explaining about Zebra Fish

Students visiting stalls put up at CCMB

Students and Faculty members at CCMB

Report on training in soft skills

September 9th-24th, 2024

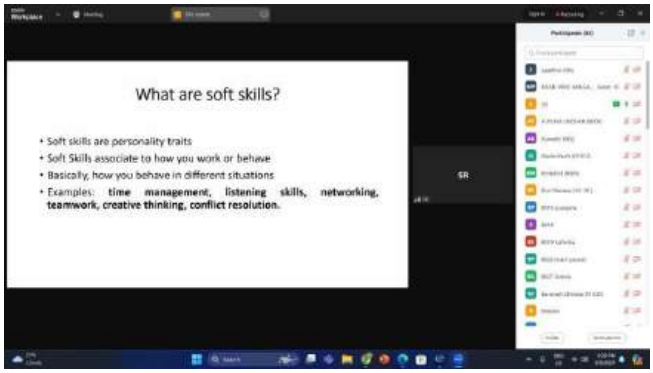
The Department of Biochemistry & Nutrition, BVC in collaboration with Ministry of MSME, Technology Development centre (Process and Product Development Centre, Agra) organized an online training programme on "Soft skills for career building and personality enrichment). The resource person for the online course was Dr. Smitha Rajagopal. The programme was formally inaugurated by Dr. Sudha Dinakaran from MSME,TDC,PPDC, Extension centre, Bangalore, on 9th September at 8.00pm in the online mood on zoom platform. The subsequent sessions were conducted by the resource person, Dr.Smitha Rajagopal. The training programme was conducted in 12 sessions covering types of soft skills including communication skills, writing skills, conflict management, team building and time management.

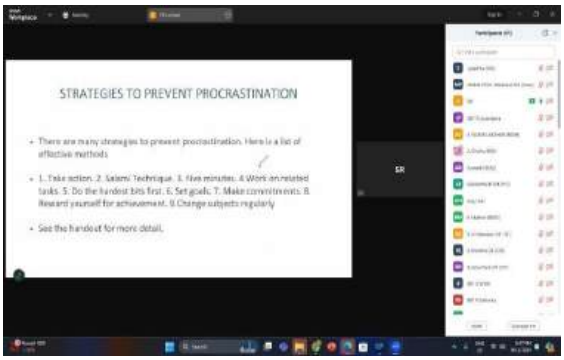
The first two days of training programme covered the essentials of communication and the students were explained the importance of listening and non verbal communication. The resource person also emphasized the importance of showing empathy and collecting feedback in the process of communication. The students were also made aware of the significance of internal communication in work places.

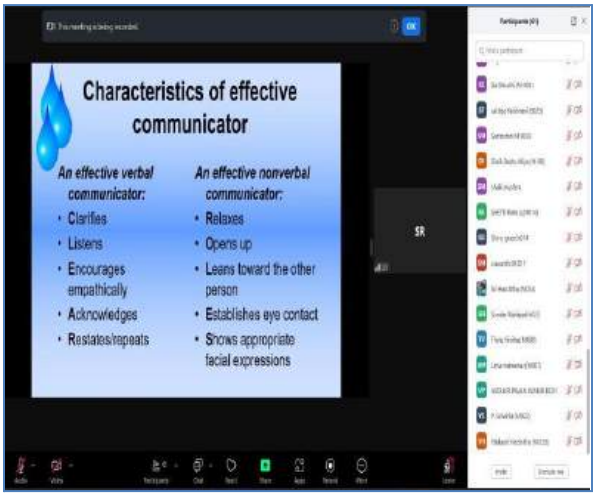
The next two days focused on Time management and conflict management. During this session, the students were made aware of different conflict management skills including active listening, emotional intelligence, patience, impartiality, positivity, open communication, Win-win approach etc..The sessions also covered topics in the area of public speaking and team work. They were also briefed on workplace etiquettes for meetings. The resource person also conducted sessions on stress management and maintaining self-esteem.

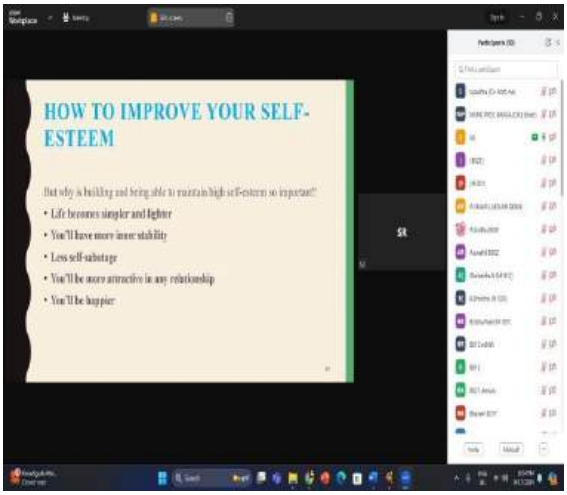
The last two days of the training programme focused on resume writing and introduction to online tools for preparing CV. The resource person encouraged the students to give extempore talk for one minute in which the students took active part. The sessions also focused on etiquettes for business presentation, team building, preparation for face to face interviews, types of

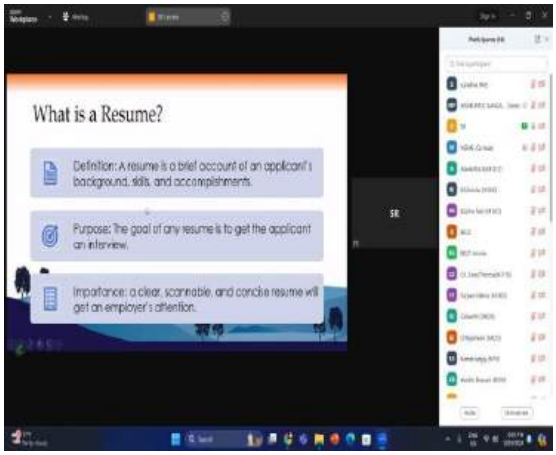
interviews and tips for a job interview. The programme ended by collecting feedback from the students and closing remarks by Dr.Smitha Rajagopal, the course coordinator. All the students expressed that the programme helped them to improve their overall personality.

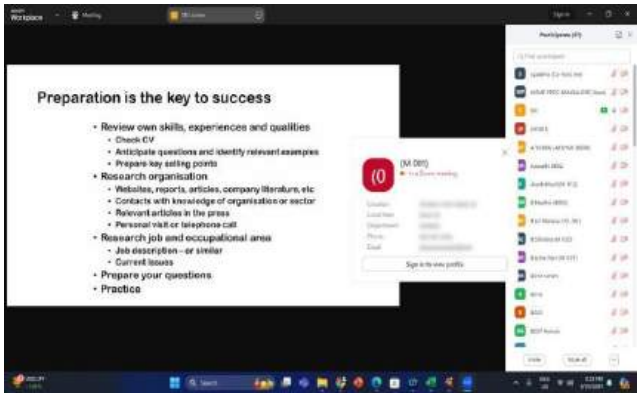


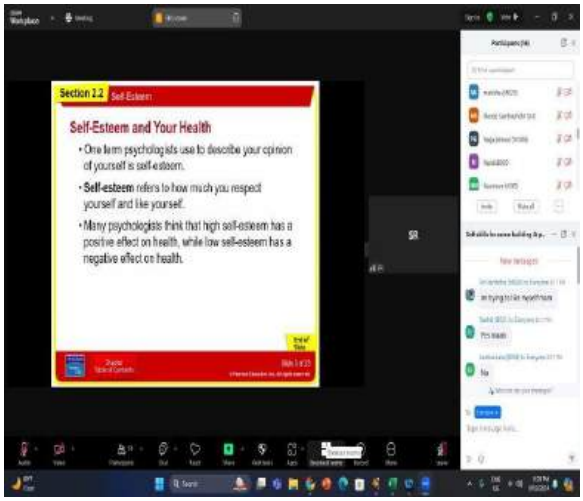











Section 2.2 Self-Esteem
Self-Esteem and Your Health
• One term psychologists use to describe your opinion of yourself is self-esteem.
• Self-esteem refers to how much you respect yourself and like yourself.
• Many psychologists think that high self-esteem has a positive effect on health, while low self-esteem has a negative effect on health.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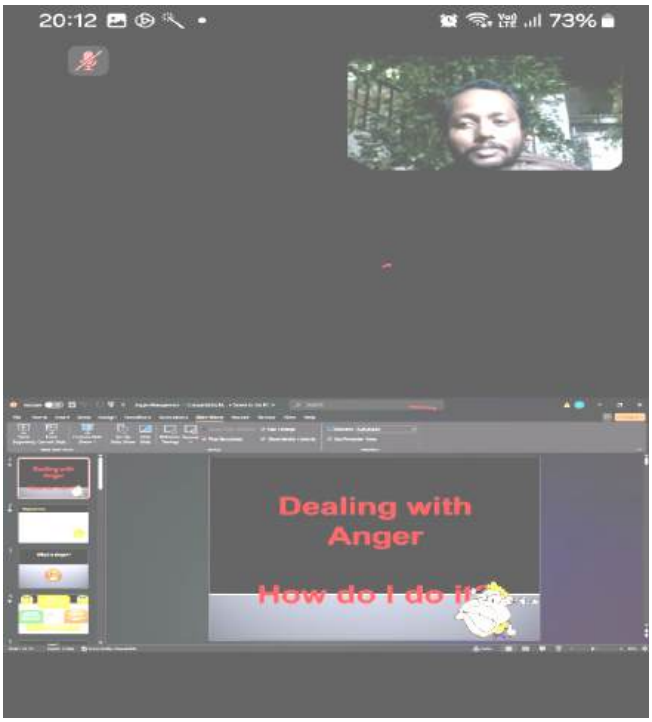
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Dealing with Anger
How do I do it?

Department of Biochemistry & Nutrition
Report
Value Added Course
"Hands on cum Quality Control Training Programme on Food Processing and Preservation"
CFTRI (Centre for Food Technology Research Institute), Habsiguda, Hyderabad.
2024-25
18th to 20th of November, 2024.

The department of Biochemistry & Nutrition, Bhavan's Vivekananda College of Science, Humanities and Commerce has organized a three-day Workshop on "Hands on Training Programme on Food Processing, Preservation and cum Quality Control" as a part of skill development in collaboration with CFTRI (Centre for Food Technology Research Institute), Habsiguda, Hyderabad.

The Workshop was scheduled from 13th to 16th of February, 2024 at CFTRI, Habsiguda, Hyderabad from 10:00 am to 5:30 pm. A total of 15 students from BCNDC final and second year have undergone the training session. Students had hands-on training in various food processing techniques like preparations of tomato pickle, dehydrated potato chips, millet kurkure, mango juice, mixed fruit jam, tomato ketchup, and muffins. Apart from this quality analysis of carbohydrate, protein, fat, fibre, moisture and ash content of the products were also done.

On day 1, students had an introductory session by Ms. Sathiya Mala, Senior Principal Scientist and Dr. Prabhakara Rao, Senior Technical Officer who briefed about the activities included in the workshop for all the three days. Initial preparations of tomato pickle and dehydration of potato chips were done, which was followed by preparation of extruded snack kurkure from a combination of four millets, mixing of spices to the snack and packing was also completed. Preparation of the mango juice from the readily available pulp along with bottling of the juice was done.

On day 2, students continued a few more processing steps of tomato pickle preparation and dehydrated potato chips. This was continued with preparation of tomato ketchup, mixed fruit jam and muffin. Qualitative analysis of the prepared snacks was done which included analysis of moisture, protein, fat, fibre and ash analysis of the extruded snack millet kurkure.

On day 3, final preparation of tomato pickle and dehydrated potato chips and their packaging was completed. Labeling of all the products was done after completion of packaging. Mr. D. Madhusudhan Rao, Senior Technical Officer, explained on packaging of different food items. The session ended with an explanation of Dr. Sreedhar on calculation of carbohydrate, protein, fat, moisture and ash content of the products.

The workshop concluded with a valedictory session. It concluded with a question-and-answer session followed by feedback from the students and distribution of certificates to the students.

Overall, the training session was very enriching with good technical knowledge on various food preparations and their analysis.

Inauguration of the Workshop

Pre-preparation of potato chips and tomato pickle

Dehydration of potato chips

Preparation of Muffins

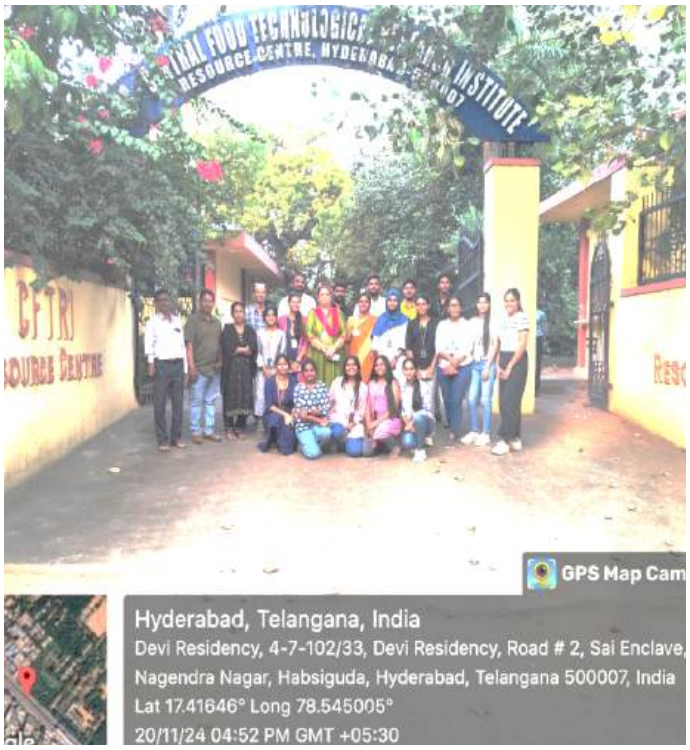
Extruded millet Kurkure using the Extruder Machine

Bottling of Manjo Juice, tomato pickle and tomato ketchup

Faculty members of CFTRI explaining and helping students in using various equipments

Texture Analyzer Fat Analyzer Analysis of the prepared food product

Certificate distribution to the students



Display of the seven food products prepared

Students with faculty of CFTRI

Students of CFTRI workshop with Dr. G.S.V.R.K. Choudary, Principal and Dr. Sai Padma, Head, Dept. of Biochemistry & Nutrition Bhavan's Vivekananda College

Department of Biochemistry & Nutrition

Visit to Anganwadi

19-12-2024

Department of Biochemistry & Nutrition has organized a visit to an Anganwadi, Nirmal Nagar, Sainikpuri, for the students of B.Sc (BCNDC III yr) as a part of their practical curriculum on 19-12-2024. The Anganwadi Teacher, Mrs. Aruna has briefed the students regarding the regular activities and facilities of the Anganwadi. As a part of the visit, the students went through the charts, equipment, records maintained and nutritious food which is distributed to the vulnerable groups like pregnant females and lactating females, infants and children below 6 years. They have also taken the measurements of 18 students under age of 6 like height using stadiometer, weight using a weighing scale, Mid Upper Arm Circumference using a MUAC tape, and subcutaneous fat layer using skin fold calipers. Students have also calculated the Body Mass Index (BMI) using the height and weight measurements of the children and used in plotting graphs to check the growth pattern of the children. They have analyzed the data to classify students into undernourished, normal and obese groups. The overall experience was very informative, practical oriented and helped the students to understand the significance of anthropometric measurements in assessing the nutritional status of the children. A total number

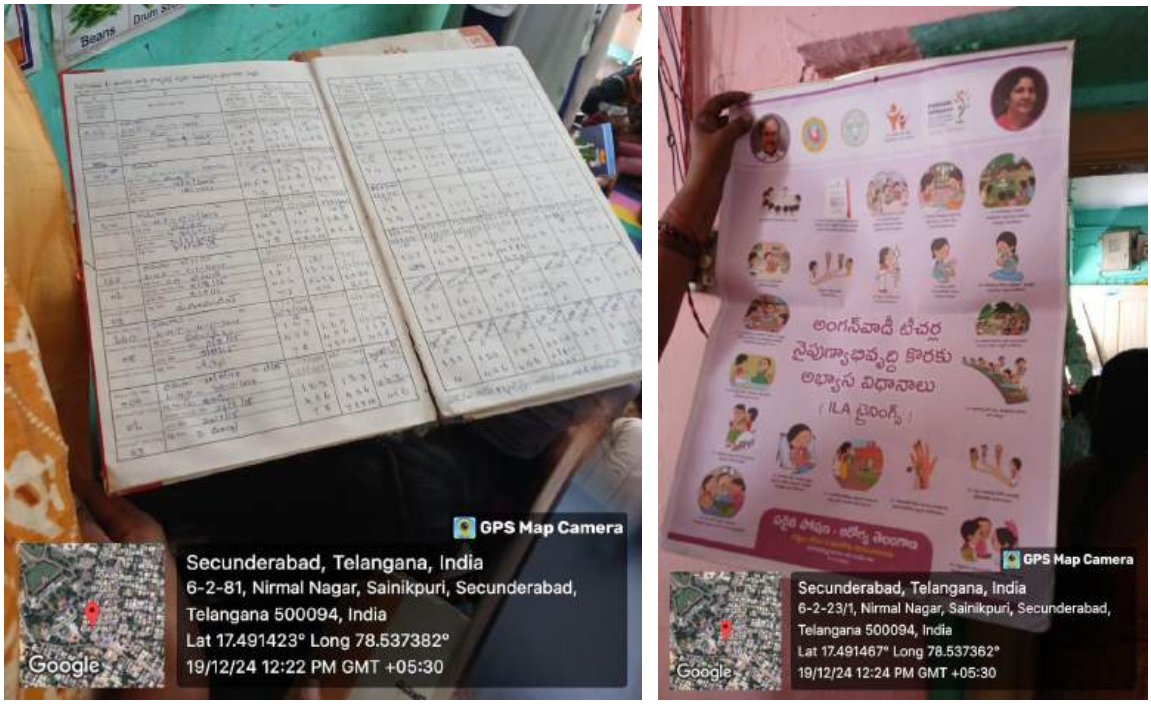
of 22 B.Sc students have attended the visit. Students were accompanied by Asst. Prof. Mrs. V. Revathi.

Students measuring the weight and height of children

Measuring the MUAC and skinfold calipers of the children

Spring balance at Aanganwadi to measure weight **AV Aids used to educate the students**

Baalaamrutam and puffed Millet-protein given to the students at Aanganwadi



Records maintained at Anganwadi and material for teachers' skill enhancement

Students of BCNDC III yr at Aanganwadi, Nirmal Nagar, Sainikpuri

Report on Outreach Program

4-1-2025

The Department of Biochemistry & Nutrition has organized a half day outreach program on "Scope & Career Aspects of Biochemistry & Nutrition" for class 11 students of Kendriya Vidyalaya, Thirumalagiri, at Bhavan's college on 4th Jan,2025. The students along with one faculty member visited the department in the afternoon from 1.30pm to 3.30pm. The faculty members, Dr.S.Padma, Dr.S.Vanitha, Dr.S.Manju Devi, Dr.Kamala. G, and Mrs.A.Durga Bhavani, explained the principle and applications of various experiments including PCR & Soxhlet extraction, SDS-PAGE , Agarose gel electrophoresis, Laminar air flow chamber, High speed Centrifugation , ELISA, UV-Visible spectrophotometer. Mrs. Revathi.V, Lecturer in Nutrition, explained nutrition related topics including BodyMass Index, Food pyramid and My Food Plate. A total of 24 school students and one faculty member have participated in the outreach program, and all sessions were interactive and students were benefitted. At the end of the session, Dr.S.Padma, Head, Department of Biochemistry & Nutrition presented and overview of the Departmental activities and explained the career opportunities in Biochemistry & Nutrition.

Dr .S. Padma (HOD) Explaining students about soxhlet extraction

Dr. Vanitha. S explaining SDS-PAGE & Agarose gel electrophoresis techniques

Dr.Kamala Golla explaining high speed Centrifuge technique to the students.

Mrs.V.Revathi explaining food pyramid To the students.

Mrs.A.Durga Bhavani explaining UV-visible spectrophotometry and ELISA to the students.

Students are checking heights of the participants.

Faculty members with participants of outreach program.

Guest lecture

23rd January, 2025

The Department of Biochemistry & Nutrition organized a guest lecture on "**Introduction to Indian Knowledge System: Applications in culinary and medical sciences**" by Dr. Mohan Raghavan, Head (HST) & Associate Professor, IIT, Hyderabad on 23rd January, 2025. Indian Knowledge System (IKS) is a framework that encompasses various disciplines of study like medicine, agriculture, nutrition, culinary, arts, mathematics, engineering, linguistics, literature, philosophy, and many more. Dr. Raghavan, during the lecture, emphasized on attaining the ultimate joy with righteousness i.e. Atmanandam when Dharma is followed. He explained the importance of maintain homeostasis or Sama Sthiti of the body, being the actual definition of health. He also spoke the coexistence of Bhoga (immersion) and Yoga (detachment) exist in harmony, which forms the foundation of Dharma, i.e., maintaining equilibrium in life and Nature. He also highlighted about Ayurveda and gave awareness on important elements in Indian knowledge system like Tri dosha – Vata , Pitta, Kapha, Five elements (Pancha Bhoota) : Earth, Water, Fire, Air, and Space, Thirteen Agnis: Digestive and Metabolic fire, Seven Dhatus : Tissues of the body and Three Malas: Waste products of the body. He finally concluded how IKS encompasses other subjects under its umbrella rather than standing out as a separate subject of its own. A total of 86 students from UG and PG have participated and acquired knowledge on Indian knowledge system. Overall, the session was very interactive and enlightening.

Dr. Mohan Raghavan delivering a lecture

Dr.Mohan Raghavan felicitated by Dr.S.Padma (HOD)

Dr. Mohan Raghavan with the faculty of the Dept of Biochemistry & Nutrition

Guest lecture

28th January 2025

The Department of Biochemistry & Nutrition organized a guest lecture in association with INSTITUTION'S INNOVATION COUNCIL, Bhavan's Vivekananda College on **"INNOVATION TECHNOLOGY AND ENTREPRENEURSHIP IN LIVESTOCK SECTOR**" by Dr.M. Muthukumar ,Principal scientist, ICAR –NATIONAL RESEARCH CENTER ON MEAT on 28th January, 2025. The livestock sector is undergoing rapid advancements to ensure productivity, sustainability, and consumer health. Dr. Muthukumar during his lecture, explained about sustainable food systems and ethical practices to promote organic milk,meat and eggs and free range of animal farming. He also highlighted the role of improved genetics and breeding in increasing the egg and milk production. The speaker also spoke about how the Embryo transfer technology enhances productivity in sheep, goats, and pigs. He described about product processing & packaging systems which included freshness indicating stickers for meat and use of phytochemicals and nanoparticles as antibiotic substitute to improve product safety. He finally concluded the emerging innovations in development of lab – grown meat as a sustainable alternative and production of functional foods enriched with nutrients for better health outcomes.

Guest speaker, Dr. Muthukumar addressing the audience

Dr. Muthukumar felicitated by Dr.S.Padma HOD

Dr.Muthukumar with faculty members of Dept.of Biochemistry & Nutrition

Department of Biochemistry & Nutrition

"Visit to Yashoda Hospital"

02nd January, 2025

The students of BCNDC final year were taken for a visit to Yashoda Hospital, Secunderabad on January 2nd, 2025 as part of their course curriculum. The Chief Dietician Mrs. Swetha A. (Registered Dietician) addressed the students about the role and job profile and the challenges faced by dietitian in clinical practice. The students were shown the food and beverage units, which included the hospital kitchen and cafeteria. Students got an opportunity to understand the necessity and significance of quality and quantity food preparation in a hospital set up. Intricate points were well explained by the dietitians regarding planning and preparation of the special feeding methods. This was followed by case study review using case sheets of the inpatients while the students were taken to the inpatient wards. Oncology wards, postsurgical wards, dialysis units etc. were visited by the students. A total of 24 students have visited the hospital accompanied by Mrs. Revathi. V, Lecturer in Nutrition & Dietetics, Dept. of Biochemistry & Nutrition. Overall, the visit was very informative, practical oriented and highly beneficial to the students.

Explanatory session by Chief Dietician Mrs. Swetha A.

Chief Dietician Mrs. Swetha A. addressing the students on nutrition related topics

Students visit to the inpatient wards

Dialysis unit

Case sheet review

Food and Beverage department of the Hospital

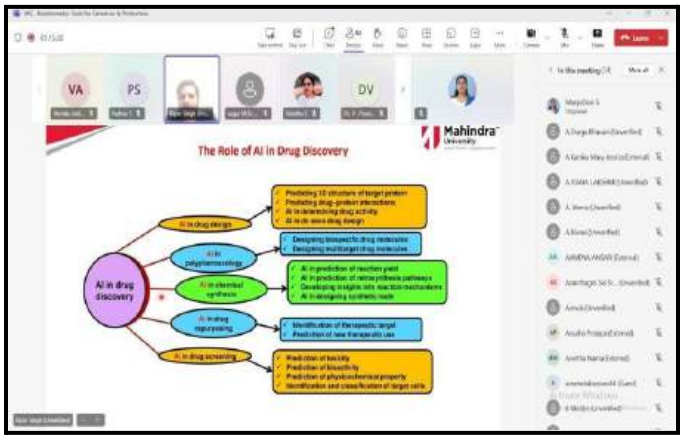
Students with faculty and Chief Dietician Mrs. Swetha A., Yashoda Hospital, Secunderabad.

Guest lecture

1st February 2025

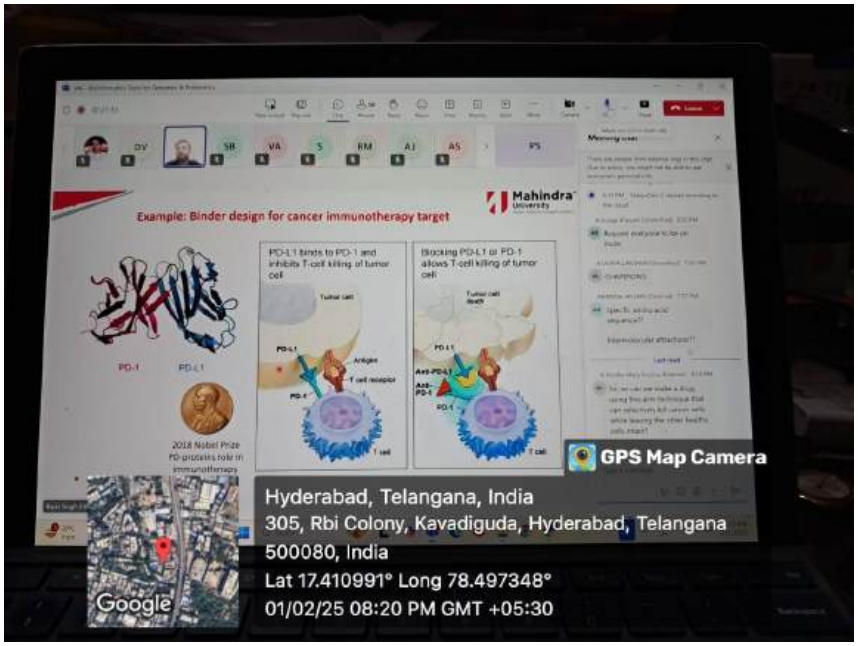
The Department of Biochemistry & Nutrition, Bhavan's Vivekananda College, organized an insightful online guest lecture on the topic "Application of AI and ML in Drug Discovery and Protein Design" by Dr. Bipin Singh, Assistant Professor in Bioinformatics, Centre for Life Sciences, Mahindra University, Hyderabad, an expert in the field of Bioinformatics. The lecture was designed for students, faculty, and researchers, aiming to understand the growing role of Artificial Intelligence (AI) and Machine Learning (ML) in revolutionizing the process of drug discovery and protein design. Dr. Bipin Singh shared his extensive knowledge on the intersection of AI, ML, and biotechnology. His lecture focused on how these technologies have brought significant advancements to drug discovery and protein design, areas that are essential for improving healthcare outcomes. The speaker explained how AI tools are used to predict interactions between drugs and protein targets. This is crucial in identifying therapeutic targets and understanding the molecular mechanisms behind diseases. AI and ML algorithms have been instrumental in addressing challenges related to protein folding. Dr. Singh discussed how AI is helping in the design of synthetic proteins and enzymes with specific functions, which can be used in drug development. He highlighted the use of resources like Protein Data Bank (PDB) and various AI-driven software tools that help researchers simulate protein behaviour. The session was highly interactive, with total 54 students, faculty, and researchers actively participating in the discussion. Dr. Singh answered questions related to AI's impact on pharmaceutical research,

the ethical considerations involved in AI-driven medicine, and future trends in bioinformatics. The speaker also gave an overview of the career options in the field of bioinformatics. Several students expressed a keen interest in exploring bioinformatics and related disciplines further, particularly AI and ML applications in life sciences.



Dr. Bipin Singh explained to percipients about role of AI in Drug Discovery

Dr. Bipin Singh explained to percipients about role of AI and ML in Drug Discovery and Protein design.



Dr. Bipin Singh explained binder design for cancer immunotherapy target.

Department of Biochemistry & Nutrition

World Cancer Day

4th February 2025

The Department of Biochemistry & Nutrition organized events on the occasion of **"World Cancer Day 2025"**. World Cancer Day is observed on February 4th every year. The day serves as a global effort to raise awareness about cancer and promote its prevention, detection and treatment. The theme for this year was **"United by Unique"**. A Sketching competition was held on February 3rd 2025 on this theme where a total of 21 students from different streams have participated very actively. A guest lecture on "**Cancer Prevention and Screening"** by Dr. Bushra Khan, Breast Cancer Surgeon and Consultant Surgical Oncology, Star Hospital, Nanakramguda, Hyderabad, on 4th February, 2025. The lecture started with a brief introduction on types of cancers and explanation on screening procedures. Dr. Bushra Khan also highlighted about prevention and effective treatment methods. She highlighted the specific age at which the females have to be given cervical cancer vaccines and also the self-checking of breasts for perception of any lumps or nodules. The session concluded with interaction of the participants including students and faculty with the guest speaker. A total number of 70 students have attended the lecture.

Students actively participating in Sketching competition

Principal Dr. GSVRK Choudary having a glance at the sketches of participants

Participants along with Dr. GSVRK Choudary, Principal, Dr. S. Padma, Head, Dept. of Biochemistry & Nutrition and Staff

Dr. Bushra Khan, delivering the lecture on Cancer- Prevention and Screening

Dr. Bushra Khan Judging the Sketches of the participants

Consolation and II Prize winners along with faculty and judge

First Prize winner in Sketching along with faculty and judge

Memento presentation to the guest speaker by Dr. S. Padma, Head, Dept. of Biochemistry & Nutrition

Students and Staff along with the Guest Speaker

Visit to NIPER, Balanagar, Hyderabad
(National Institute of Pharmaceutical Education and Research)
5-02-2025

The Department of Biochemistry & Nutrition organised an educational visit to NIPER, Hyderabad for M.Sc Biochemistry semester IV students on 5th February, 2025. A total of 27 students with two faculty members visited NIPER. The students were shown the high-end instruments that are used in science research programmes like ICPMS, HPLC, HPTLC, LC-MS/MS, SEM, NMR spectrometer, Zeta sizer for particle size analysis, Microfluidizer, Nano ball mill, fluorescence microscope and Confocal microscope. In the Regulatory toxicology department, students were shown the tissue sectioning and fixation and automated differential blood cell counter. A presentation on docking studies for drug design using bioinformatics tools was also explained to the students. Students visited animal house facility and tests such as Rotarod tests and YMaze tests were explained to them. Students interacted enthusiastically with the staff and the research scholars at the institute and were benefitted from the information provided.

PPT presentation on drug design using docking studies explaining to students

Dr.Shankariah, Faculty of NIPER interacting with students

Students and Faculty at NIPER

Report

Workshop on "Cell Culture Techniques"

In collaboration with Institute of Genetics and Hospital for Genetic Diseases (IGHGD)

5th to 7thFebruary, 2025

The Department of Biochemistry & Nutrition organized a three-day workshop on "Cell Culture Techniques" in collaboration with Institute of Genetics and Hospital for Genetic Diseases (IGHGD), Hyderabad from 5th to 7thFebruary, 2025. A Total of 9 students (B. Sc III year and II yearBCNDC) attended the workshop. The program's objective was to provide undergraduate students with the basic principles and practical knowledge of cell culture, preservation, and maintenance, enabling them to apply these skills in research or higher education.

The workshop was structured into theoretical sessions and practical laboratory sessions, tailored for undergraduate understanding. The resource person was Dr. B. Vijaya Lakshmi, in charge Director, IOG, Hyd. She explained the basic principles of cell culture, cell types, media composition and its importance, subculturing techniques, cell counting, and principles of cryopreservation. She also discussed on the common problems in cell culture and troubleshooting strategies.

This was followed by hands-on session, where Mr. Giri, Research scholar, explained about the biosafety cabinet, precautionary steps before starting cell culture, different types of

culture vessels, media types and importance of CO_2 incubator. Later he demonstrated cell culture process, checking the confluency of culture under inverted microscope, trypsinization, dilution of the cells, counting the cells using haemocytometer, checking the cell viability using trypan blue dye and cryopreservation of cells. He explained the protocol to stain and view the nucleus of cells using fluorescence in situ hybridization (FISH). Students were given hand on experience to perform all the steps by themselves. Students enthusiastically were engaged in performing all the steps as demonstrated by the resource person. This workshop introduced students to the essential concepts of cell culture, preservation and maintenance.

The three-day workshop on Cell Culture Techniques proved successful, providing participants with valuable knowledge and hands-on experience in cell culture techniques, which will be beneficial in their future studies or research. Certificates were distributed and students gave positive feedback on the workshop.

Mr. Giri, Research scholar explaining to the students about types of media and culture vessels

Ms. Prerna performing trypsinization and Ms. Samaja staining the cells with trypan blue

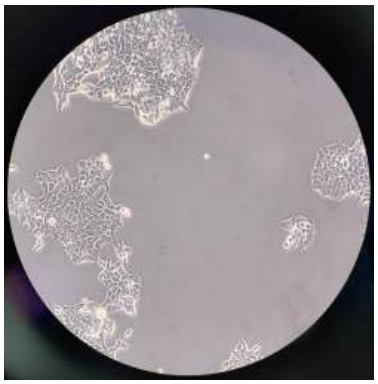


Image of the HCT 116 cell lines under inverted microscope to check its confluency

Ms. Taniya adding cryopreservative (DMSO) to cryopreserve the cell lines

Report on

Value added course (2024-25)

"Bioinformatics tools for Genomics and Proteomics study"

20th January to 5th February 2025

The Department of Biochemistry & Nutrition organized a 30-hr value-added course on "Bioinformatics tools for Genomics and Proteomics study" from 20th January to 5th February 2025 on online mode. The aim of this value-added course was to equip participants with the knowledge and practical skills to effectively utilize bioinformatics tools for analysing and interpreting genomic and proteomic data, enabling them to contribute meaningfully to research and development in various fields of life sciences.

A total of 57 undergraduate, postgraduate, and research scholars, along with faculty members from 18 institutions including Avanthi Degree and PG College, Maulana Azad National Urdu University, Veeranari Chakali Ilamma Women's University, VIT, St. Ann's College for Women, Chaitanya Deemed to be University, JNTUH, Osmania Medical College, RBVRR Women's College, Aurora Degree College, Jahnavi Degree and PG College, St. Xavier's College (Mumbai), Birla Institute of Science and Technology, Pilani (Hyderabad Campus), Yogi Vemana University, St. Pious Degree and PG College for Women, Kakatiya University (Hanamkonda), Jamia Hamdard and Bhavan's Vivekananda College successfully completed the course.

On the first day, Dr. G.S.V.R.K. Choudary, Principal, Bhavan's Vivekananda College and Dr. S. Padma, Course Coordinator Incharge Head of the Department, inaugurated the course. They emphasized the importance of bioinformatics in research and its diverse applications across

various fields. Mrs. B. Niraimathi, IQAC Coordinator, and Dr. K. Anuradha, Head, Dept of Microbiology and in charge, Faculty of Life Sciences, encouraged the participants to maximize their learning by fully engaging with the course content.

The Resource persons for the value added course were Dr.S.Padma, Dr.S.Vanitha, Dr.Manju Devi,S and Dr.Kamala Golla, faculty from the Department of Biochemistry & Nutrition, BVC. The course content included sessions covering the theory and practical aspects of bioinformatics including sequence retrieval of nucleotides and proteins from NCBI, use of web based tools like BLAST, GENSCAN, CLUSTALW for sequence analysis, RNA structure prediction, insilico primer designing, insilico PCR, protein structure prediction, Cytoscape and STRING for understanding protein protein interactions, and softwares like Chem Sketch and AutoDock to analyse protein drug interactions. The course also provided hands on session on the use of Galaxy platform to carry out bioinformatics analysis. The participants were given hands on sessions on the use of tools like Biopython and R in bioinformatics applications.

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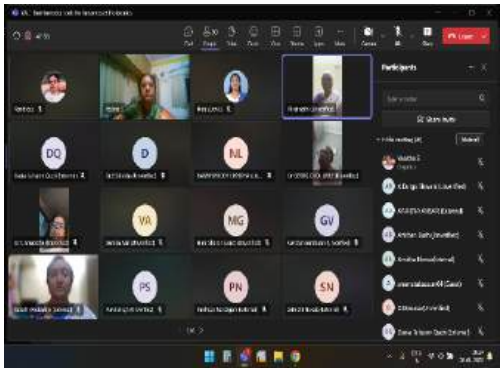
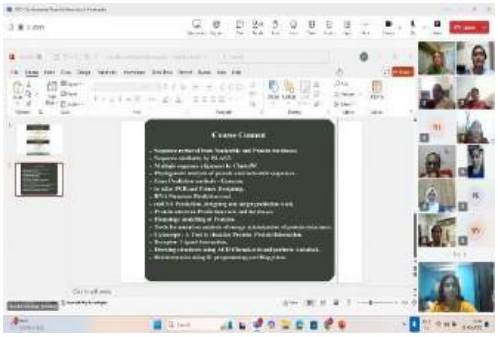
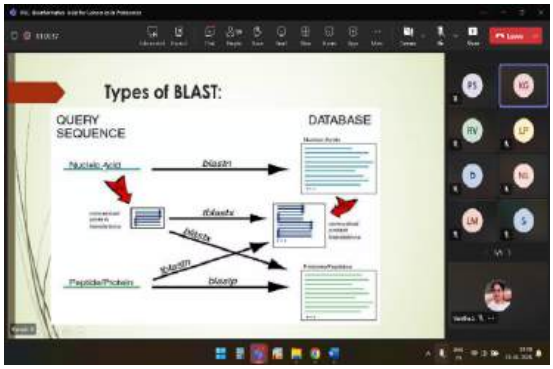
The course also included a guest lecture, on the topic **"Application of AI and ML in Drug Discovery and Protein Design**" by Dr. Bipin Singh, Assistant Professor, (Bioinformatics), Centre for Life Sciences, Mahindra University, Hyd on 1st February 2025. The resource person highlighted the basics of machine learning (ML) and Deep Learning (DL) and their role in protein design and role of AI in accelerating drug discovery by analyzing biological data to identify potential drug targets, predict drug interactions, and optimize drug design.

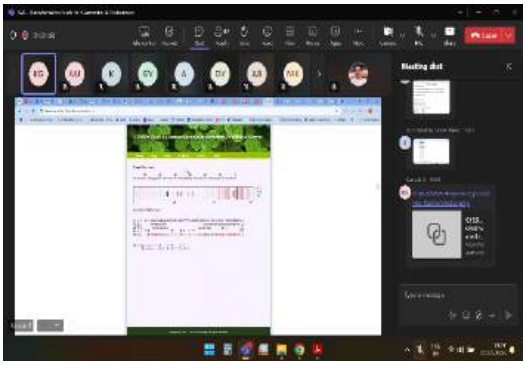
The students gained a rich and highly informative hands-on experience with bioinformatics tools. The course concluded with a valedictory session on 5th February,2025 which was attended by Dr.G.S.V.R.K.Choudary, Principal, BVC , resource persons and the faculty of the Department of Biochemistry & Nutrition, BVC. Dr.Choudary addressed the participants and gave concluding remarks. The participants shared their feedback to the principal. Dr.S.Vanitha presented a report on the proceedings of the value added course. The programme concluded with vote of thanks by Dr.S.Padma



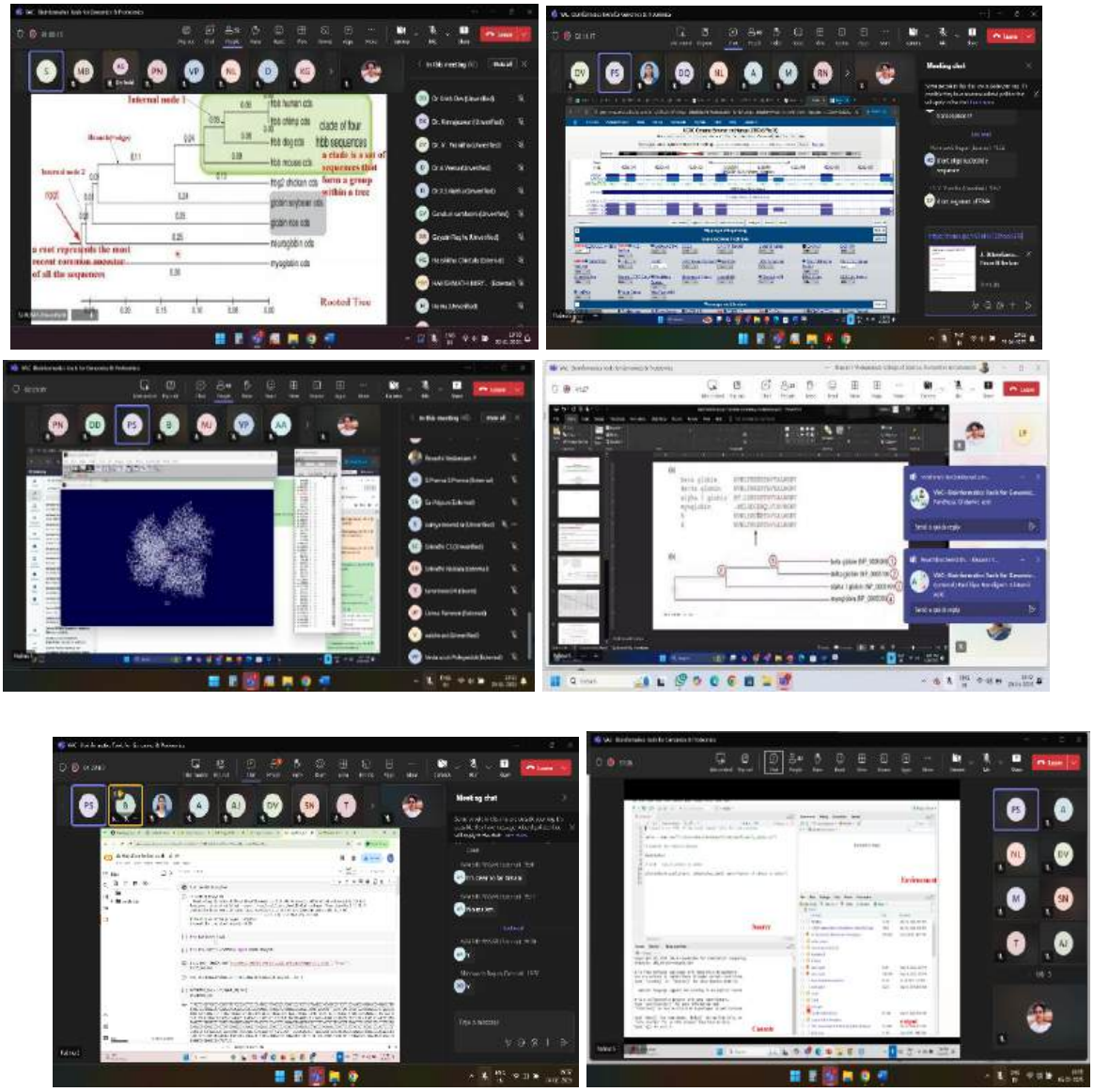


Inaugural by Dr. GSVRK. Choudary, Mrs.B.Niraimathi, IQAC coordinator, Dr.K.Anuradha, Head Department of Microbiology and Dr. S. Padma, Head, Dept of Biochemistry & Nutrition

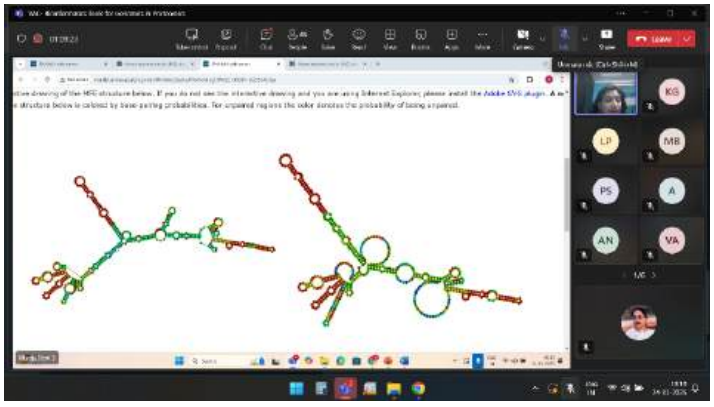




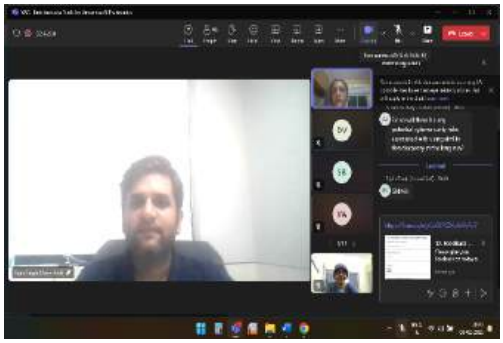
Resource person- Dr. Kamala Golla explaining sequence similarity using BLAST, tools for protein prediction



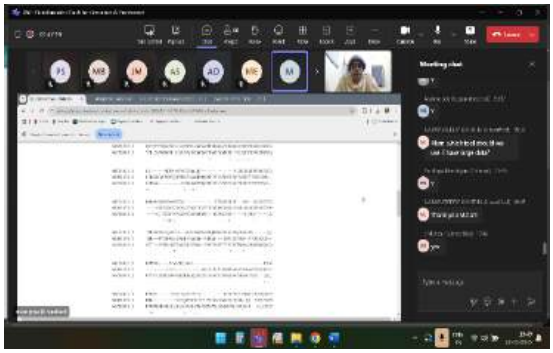
Dr. S. Padma, Resource person demonstrating the various tools for phylogenetic analysis, energy minimization of protein, use of Biophyton and R Programming in Bioinformatics

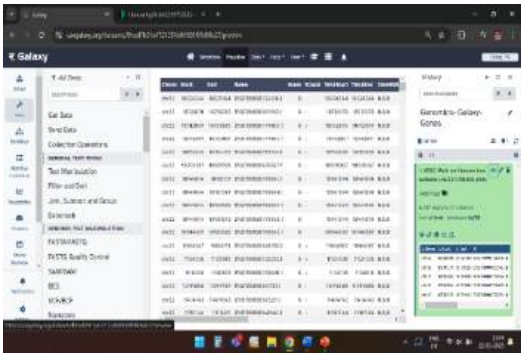


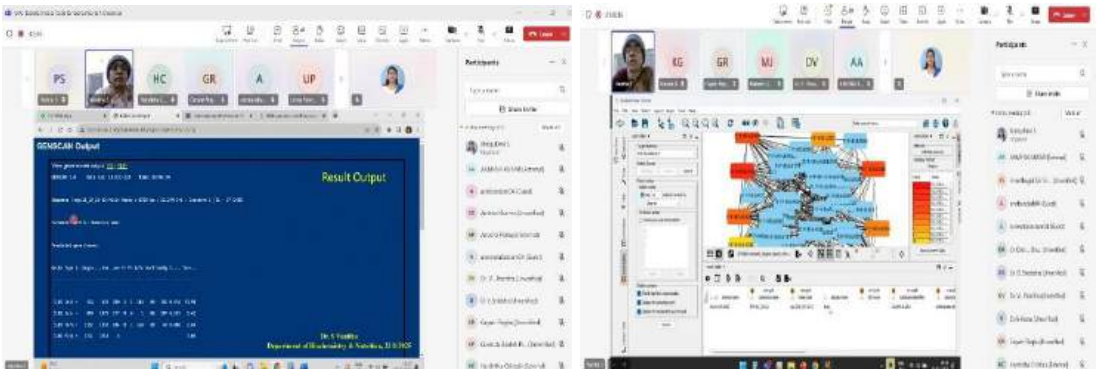
Dr. Manju Devi, Resource person demonstrating the tools of RNA structure prediction



Dr. Bipin Singh, Resource person delivering a lecture on Applications of AI and ML in Drug Discovery and Protein Design







Resource person, Dr. S. Vanitha, explain about ClustalW, GenScan and Cytoscape tools

Dr. G S V R K. Choudary, Principal addressing the participants and listening and viewing the feedback given by the participants during valedictory

Dr. B. Vijaya Lakshmi, In charge Director, IGHGD, Resource person explaining about the basic principles on Cell culture techniques

Report on
2 Day Workshop on Skill Development Workshop
In Collaboration with
EXCEL Education Services, Hyderabad
Molecules in 3D: Structure to Drug Discovery
21st & 22nd March 2025

The department of Biochemistry & Nutrition in collaboration with EXCEL Education Services organized a 2-day Skill development workshop on "Molecules in 3D: Structure to Drug Discovery" for M. Sc II Year Biochemistry students on 21st and 22nd March 2025. The objective of this workshop was to equip the students with theoretical knowledge and practical skills necessary to understand an apply the structure-based drug discovery principles.

Day 1: 21st March 2025

The workshop was inaugurated by Dr. G. S. V. R. K. Choudary, Principal, BVC, Prof. D. Kashinath, Dept of Chemistry, National Institute of Technology (NIT), Warangal, Mrs. Raja Rajeshwari, Director, EXCEL Education services and Dr. S. Padma, Head, Dept of Biochemistry & Nutrition. All the dignitaries addressed the students briefing about the importance of drug discovery.

The keynote address was delivered by Prof. D. Kashinath. He gave an overview of the drug discovery process, from target identification to clinical trials, role of molecular structure in drug design and key concepts in medicinal chemistry and pharmacology. Practical session was handled by Mr. Pavan Kumar, Resource person, EXCEL Education services briefed about the virtual screening process and the computational tools and software's for molecular docking. Tools that were used for docking were Pymol (visualization and sequence identifiers), MGL tools (visualization), BIOVIA Discovery studio (visualization, editing of receptor and ligand) and Autodock (Docking). Students were able to retrieve the protein structure from PDB database.

Day 2: 22nd March 2025

On second day students were able to edit the structure of protein and ligand using Discovery studio and continued the Docking process with Autodock. Later they were explained about analyzing and validating the results. After the practical sessions, Dr. Amit Kumar Banerjee, from ELMED Life Sciences, presented a lecture on the history and future of drug design, with a focus on selecting effective lead compounds.

The workshop concluded with a successful valedictory session, where students received participation certificates and provided positive feedback. Students found the practical, hands-on molecular docking sessions to be an enriching and valuable learning opportunity.

Fig 1. Inaugural Session of the 2-day Workshop on "Molecules in 3D: Structure to Drug Discovery" for M. Sc II Year Biochemistry students on 21-03-2025

Fig 2. Prof. D. Kashinath delivering the keynote address, 21-03-2025

Fig 3. Mr. Pavan Kumar, Resource person, EXCEL Education Services, explaining various tools for Molecular docking, 21-03-2025

Fig 4. Students executing the computational tools to retrieve the structure of protein, 21-03-2025

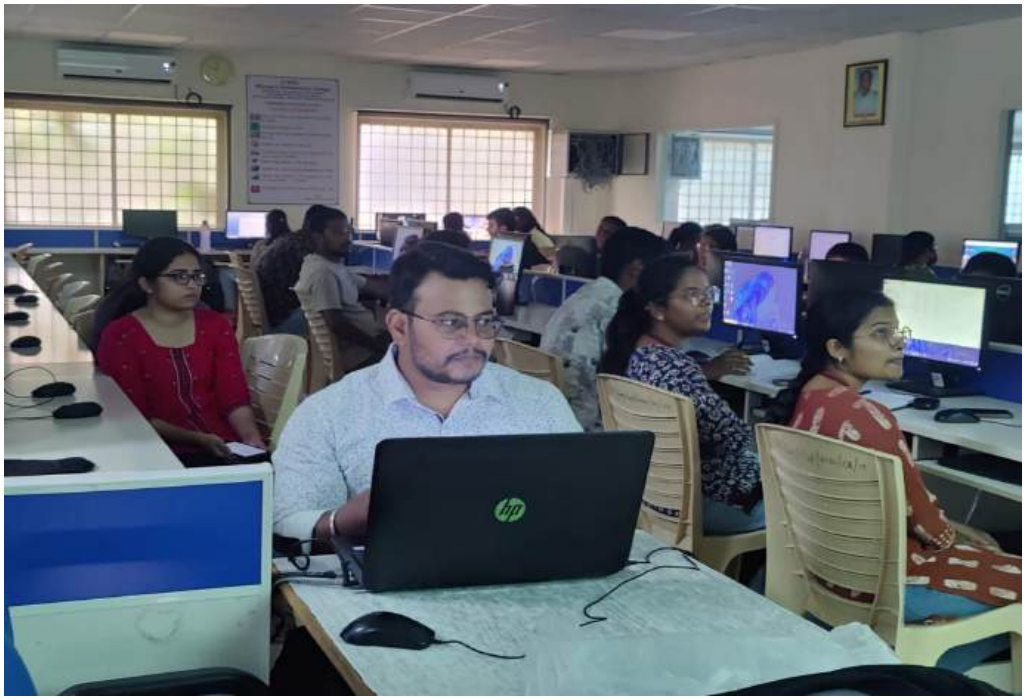


Fig 5. Resource person explaining the tools for docking, 22-03-2025

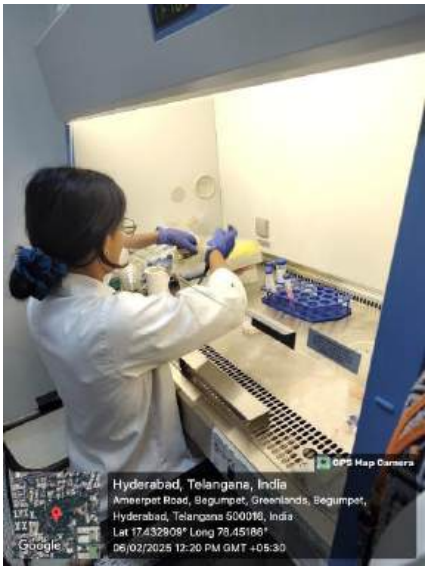
Fig 6. Students using the computational tools in viewing the protein- ligand docked structure, 22-03-2025

Fig 7. Dr. Amit Kumar Banerjee, presenting a lecture on the history and future of drug design 22-03-2025

Fig 8. Dr. K. Anuradha and Dr. S. Padma presenting a momento to the Resource person Dr. Amit Kumar, 22-03-2025

Fig 9. Participation certificate presented to the students, 22-03-2025

Fig 10. Group photo with the resource persons, organizers and students, 22-03-2025



Ms. Vamika performing the trypsinization and Mr. Giri, Resource person explaining the importance of CO_2 incubator and microscope used to view the cells

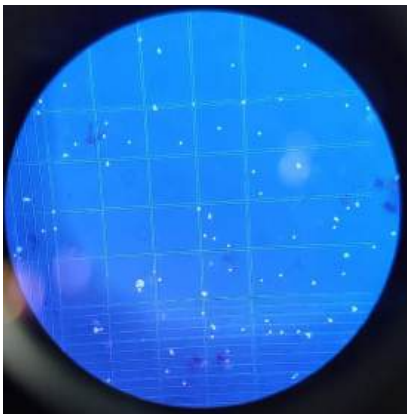


Image of HCT 116 cell line after trypan blue stain and Mr. Taj observing the cells

B. Sc II year BCNC students experiencing hands on training during the workshop

Dr. S. Vanitha, Faculty in charge with the students at IGHGD, Hyd

Dr. B. Vijaya Lakshmi, Resource person, Dr. S. Padma, Head, Dept of Biochemistry & Nutrition with participants.