The Faculty Development Programme on
Innovations and Applications of Computational Science in the Indian Higher
Education System

The 3rd Short-Term Capacity Building Program on "Innovations and Applications of Computational Science in Indian Higher Education System," held from **April 16th to 24th, 2024**, at the School of Engineering and Technology, AIU-Chitkara University Academic and Administrative Development Centre (AIU-CUHP-AADC), in association with IQAC-Chitkara University, Solan, Himachal Pradesh, India, showcased a concerted effort towards advancing capacities within academia through cutting-edge technological insights. Spearheaded by esteemed mentors like Dr. Ashok K Chitkara, Chancellor of Chitkara University, and Dr. Madhu Chitkara, Pro-Chancellor, alongside prominent figures such as Dr. Rajnish Sharma, Vice Chancellor of CUHP, and Dr. Meenu Khurana, Pro-Vice Chancellor of CUHP, the program aimed at fostering academic and administrative excellence. Supported by eminent advisors including **Dr. Amarendra Pani and Dr. (Mrs.) Pankaj Mittal,** the event featured a diverse roster of speakers, including luminaries from various esteemed institutions, enriching participants with comprehensive insights into computational science and its applications in higher education. AIU-AADC-FDP was coordinated by Dr Usha Rai Negi, Consultant, Research Division, AIU.

Throughout the inaugural session, which extended from 11:30 AM to 11:30 AM, various distinguished speakers shared their insights and perspectives. Prof. Dr. K. Subramanian from IGNOU discussed the transformative shift towards education on demand and for all in India, as outlined in the National Education Policy (NEP) 2020. Later, Dr. Rashmi Ashtagi from Vishwakarma Institute of Technology, Pune, Maharashtra, explored the integration of Generative AI tools in the healthcare system, emphasizing its potential for innovation and improvement. Following these enlightening talks, Dr. Yogesh Awasthi from Africa University, Zimbabwe, provided valuable insights into digital strategies for finding suitable journals for research publication, highlighting the importance of leveraging technology in academia.

On April 17th, 2024, the programme continued with engaging sessions aimed at deepening participants' understanding of computational science applications. Dr. Pradeep Kumar Singh from Central University of Jammu led discussions on IoT and data science applications in precision agriculture during the morning session, which commenced at 10:30 AM and concluded at 11:30 AM. In the afternoon, from 2:00 PM to 3:30 PM, Dr. Neeraj Kumar from Dr. B.R. Ambedkar National Institute of Technology, Jalandhar, Punjab, delved into computing innovations in research and academics, shedding light on emerging trends and best practices.

The third day of the programme, which started on April 18th, 2024, at 10:30 AM and concluded at 11:30 AM, featured sessions focused on innovations in engineering & technology, led by Dr. Javed Akhtar Khan from Gyan Ganga College of Technology, Jabalpur, Madhya Pradesh. Later in the day, from 2:00 PM to 3:30 PM, Dr. Abhishek Thakur from Chitkara University, HP, conducted hands-on sessions on Generative AI and ChatGPT prompt engineering, providing participants with practical insights and skills.

As the programme progressed, participants engaged in discussions on various aspects of computational science, including teaching pedagogy and research methodologies. Dr. Ajay Kushwaha from Rungta College of Engineering and Technology, Chhattisgarh, explored innovations in teaching and learning pedagogy during the morning session on April 19th, 2024, which began at 10:30 AM and concluded at 11:30 AM. In the afternoon, from 2:00 PM to 3:30 PM, Prof. S.S. Jamuar from IIT Delhi discussed research paper reading and writing, offering valuable guidance on effective academic writing techniques.

On April 20th, 2024, the penultimate day, starting at 10:30 AM and concluding at 11:30 AM, Dr. Meenu Khurana, Pro-VC (SOET), Chitkara University, HP, led a session highlighting the importance of embracing the power of AI across various domains. This was followed by Dr. Kanu Goel from Punjab Engineering College, Chandigarh, who discussed the applications of computational sciences in engineering & technology, providing real-world examples and case studies from 2:00 PM to 3:30 PM.

The programme concluded on April 21st, 2024, with a hands-on session by Dr. Mayank Aggarwal from Gurukula Kangri University, Haridwar, UK, on the use of AI in the higher education system, starting at 10:30 AM and concluding at 11:30 AM. Participants actively engaged in practical exercises, further enhancing their skills and knowledge in computational science applications. In the valedictory session, Dr. Meenu Khurana extended heartfelt thanks to participants, organizers, resource persons, and AIU authorities for their support, emphasizing the significance of staying abreast of technological advancements in education. Dr. Pradipta Sarangi expressed gratitude to all involved and officially declared the closure of the seven-day-long Short-Term Capacity Building Program under AIU-CU-AADC-IQAC collaboration.

The programme witnessed the active participation of **64 attendees** from Higher Education Institutions (HEIs) across India, reflecting the widespread interest and commitment to advancing computational science in the Indian higher education system. Hosted at Chitkara University, Solan, Himachal Pradesh, India, the event provided a conducive environment for learning and collaboration, fostering academic and administrative excellence through the strategic use of technology. Overall, the FDP served as a platform for bringing together

experts and educators to explore innovative approaches and applications in computational science, contributing to the enhancement of teaching, research, and learning experiences.