

REPORT
Of
FACULTY DEVELOPMENT PROGRAM

On
Cryptography and Cyber Security

Under TEQIP- III

at

**Department of Computer Science Engineering and
Information Technology,
Uma Nath Singh Institute of Engineering & Technology
Veer Bahadur Singh Purvanchal University, Jaunpur (U.P)**

Faculty Development Program (FDP) on **Cryptography and Cyber Security** was organized at the **Department of Computer Science Engineering and Information Technology, Uma Nath Singh Institute of Engineering & Technology, Veer Bahadur Singh Purvanchal University, Jaunpur** under the Twinning Program Initiative of **P E S College of Engineering, Mandya, Karnataka** under **TEQIP, Phase III** from **September 14, 2019 to September 18, 2019**. The two participating Departments were the Department of Computer Science Engineering and Information Technology, Uma Nath Singh Institute of Engineering & Technology, Veer Bahadur Singh Purvanchal University, Jaunpur Organized and managed FDP well. The main objective of this program is to make the participants aware of the recent developments in Cryptography and Cyber Security so that they can update their knowledge in this area and explore for further research. It was also expected that as the participants are all faculties of different educational institutions, the knowledge gained will be shared and further passed on to the students. The FDP was attended by 80 participants from faculty members of ECE, EE, CS, IT, Physics, Mathematics, Chemistry department of different colleges.

REGISTRATION & INAUGURATION SESSION:

The registration started at 9.00 am and the participants were provided with the FDP kit. The esteemed guests present in the occasion of inauguration were:

- Prof. BB Tiwari, HOD & TEQIP Co-ordinator, UNSIET, VBSPU Jaunpur.
- Prof. Sunder Lal, Ex. VC, VBSPU Jaunpur.
- Prof. A.K. Srivastava, Dean, FOET, VBSPU.

- Dr. Sanjeev Gangwar, HOD, CSE & IT UNSIET, VBSPU Jaunpur.
- Mr. Ravi Prakash, UNSIET, VBSPU Jaunpur.
- Prof. P.K. Mishra, Professor, Dept. of Computer Application, BHU, Varanasi.
- Mr. Sandeep Singh, Mechanical Engineering, UNSIET, VBSPU Jaunpur.
- All the faculty members of UNSIET, Co-ordinators, Organizing Team and other institute members.

Session started with lighting of lamp and “Saraswati Vandana” by students of CSE & IT. Dr. Sanjeev Gangwar, HOD of CSE & IT and Convener of FDP welcomed all the respected dignitaries and participants and explained the importance of Cyber Security in engineering and daily life. Co-Convener Mr. Dileep Yadav introduced the department of CSE and IT and highlighted the vision of department and also discussed the goal of this faculty development program. Prof. A.K Srivastava, Dean, UNSIET appreciated the program organized by CSE & IT department in his speech and emphasized the benefits of such kind of resourceful activity and also encouraged this kind of twinning activity.



TECHNICAL SESSIONS:

DAY 01: September-14, 2019: Session I

The keynote address was delivered Prof. P.K. Mishra, an eminent professor of computer science from BHU started the session. Prof. Mishra started his session by introduction of HPC and highlighted the security issues in HPC. Prof. Mishra also discussed concept of distributed computing, parallel computing and grid computing. Major challenges of this area were discussed in brief. Participants of FDP discussed the research opportunity of this field. Prof. Mishra concluded his session by giving some example of recent researches that were carried out over the globe in area of HPC.

DAY 01: September-14, 2019: Session II

The next technical session was also conducted by Prof P.K. Mishra. In this session he went into the depth of the concepts and explained research area of HPC.

DAY 01: July-08, 2019: Session III

Dr. Karan Singh is working with School of Computer & Systems Sciences, Jawaharlal Nehru University, New Delhi. His primary research interests are in computer network, network security, multicast communication and wireless sensor network. After the lunch break third session of first day started and Dr. Singh explained the concept of Security very organized way. Further Dr. Singh explained concept of security goal and cryptography in details. Dr. Singh started his session from different types of techniques for attack and demonstrated the way that is used by attackers. All the participants ask many questions to Dr. Singh and he explained and give the answer of all query. Further Dr. Singh discussed Emerging Issues in Security, Cryptography Techniques, Playfair Key Matrix, Playfair Cipher, Row Transposition Ciphers and S-DES.

DAY 01: July-08, 2019: Session IV

After a tea break Session-IV was also managed by Dr. Karan Singh. In this session Multicast Security was discussed in detail. Dr. Singh gives the overview of multicast layered system, challenges of multicast communication, and solutions for multicast challenges. Further source authentication in multicast, group key management mechanism and multicast layered system with security constraints was discussed in detail. Different research scenario was discussed by Dr. Singh and also discussed many researches that are going on in the field of Multicast security.

DAY 02: September 15, 2019: Session I

Prof. Sunder Lal, Ex. VC of VBSPU obtained his Ph.D. in 1974 from Meerut University, Meerut. He is eminent researcher in the field of Proximities and pairwise regular spaces. Prof. Lal started the second day of FDP with fundamental of RSA algorithm. In this session Prof. Lal explained and elaborated the process of digital signature.

DAY 02: September 15, 2019: Session II

During the second session of this day some latest technologies of security like Signcryption, Schnorr Signcryption has been discussed in detail. Along these technological points of view Prof. Lal explained how sender encrypts the message using above mentioned technologies and how receiver decrypt the message.

DAY 02: September 15, 2019: Session III

Day 2, session III was managed by Mr. Praveen Pandey and session resource person was Dr. Dinesh Singh, who is working as an Assistant professor in Department of CSE in MNNIT, Prayagraj. Area of interest of Dr. Singh is Ad-hoc Network, Network Security, Machine Learning and Internet- of- Things (IoT). Dr. Singh started the session with fundamental of IOT and discussed about M2M connectivity. In this session Dr. Singh discussed various security scenario of IOT. Different type of attacks that is possible in IOT was also discussed by Dr. Singh and some example of IOT attacks was given by Dr. Singh. Participants also discussed research opportunity in this field. Dr. Singh also discussed about some research that is going on over globe.

DAY 02: September 15, 2019: Session IV

After the tea break fourth session of this day was also continued by Dr. Dinesh Singh. In this session he discussed about Diffie-Hellman setup. Dr. Singh explained Diffie-Hellman setup in very easy language. Applicability of Diffie-Hellman setup was also discussed by Dr. Singh. Participants also ask many questions in this session and many research scenarios were discussed by Dr. Dinesh Singh.

DAY 03: September 16, 2019: Session I

Third day of faculty development program was on 16th- September-2019. On this day Dr. Ashish Khare is present in Vishvsharaiya shabharagar as a resource person and Dr. Khare discussed about AI Based Approach for Image forensics. In this session Dr. Khare give brief introduction of digital image processing. Dr. Khare also gave some example of how to extract information about image. Role of image in forensics and image forensics were discussed in detail.

DAY 03: September 16, 2019: Session II

This session was also managed by Dr. Ashish Khare. In this session research trend of image forensics was discussed. Some investigations were also discussed in this session where image forensics plays an important role.

DAY 03: September 16, 2019: Session III

Dr. Mohammed Javed, Assistant Professor, IIIT Allahabad delivered his session on the Image Processing, Pattern Recognition, Data Compression, Compressed Domain Processing and Analysis. The participants understood the concept of Pattern Recognition through his talk.

DAY 03: September 16, 2019: Session IV

The session started with Dr. Javed's sequel to his previous session the same day where he talked on role of Pattern Recognition in security. In this session the participants learnt the pattern recognition approach of cryptography and cyber security.

DAY 04: September 17, 2019: Session I

Dr. Rajkumar, Department of Mathematics, UNSIET, VBSPU started his session with mathematical approach of cryptography. He explained how cryptographic algorithms work and how mathematics plays important role in cryptography.

DAY 04: September 17, 2019: Session II

Dr. Rajkumar continued the session. In this session he discussed about Group theory and application of Group theory in Cryptography. Role of mathematics in encryption and decryption was also focused by Dr. Rajkumar. Research trend in this area was also discussed by Dr. Rajkumar.

DAY 04: September 17, 2019: Session III

Dr. Anil Kumar Yadav, Controller of Examination, Chhatrapati Shahu Ji Maharaj University, Kanpur delivered his talk on Location Privacy. Privacy violations in social networks and issues related to social media security was discussed in brief. The participants got an insight on the state of research going on in this field.

DAY 04: September 17, 2019: Session IV

The session started with Dr. Anil Kumar Yadav's sequel to his previous session the same day where he talked about statistical organizations and the law that bound them to preserve privacy of individuals. Some case study was also discussed by expert. Research trend in this area was also discussed by Dr. Yadav.

DAY 05: September 18, 2019: Session I

Prof. G.P. Sahoo, HoD, Law Department, BHU delivered an interactive session on digital signature & The Information Technology Act, 2000 and its (Amendment) Act, 2008. After giving a brief introduction of origin and evolution of signatures he discussed about Digital Signature Technologies. Verification of Digital Signature and technology behind it was also discussed. The participants learnt the role and applications of Digital Signature in this session.

DAY 05: September 18, 2019: Session II

Prof. G.P. Sahoo continued this session. In this session he discussed about **Legal** Recognition digital signature. Prof. Sahoo given very detailed explanation of Law and Rule that govern

information technology. Different legal scenarios of current age were discussed by Prof. Sahoo. The participants learnt the Information technology act and applicability of such act in this session.

VALEDICTORY SESSION AND CERTIFICATE DISTRIBUTION:

The valedictory session started after lunch. The honorary personalities present Prof. BB Tiwari, Coordinator, TEQIP-III, UNSIET, VBSPU Jaunpur, Prof. G.P. Sahoo, Dr. Rajkumar and Dr. Santosh Kumar. All the members of the organizing team were also present at the event. It started with the brief summing up of the entire event by Mr. Ravi Kant Yadav. The HoD of the Department of Electronics Engg, Prof. BB Tiwari, and Prof. A.K Srivastava, Dean, UNSIET appreciated the effort of the organizing team in managing the FDP so well. The participants also appreciated the topics and speakers of the program. The vote of thanks was given by Mr. Ravi Kant Yadav, Assistant Professor, Department of CSE, UNSIET, VBSPU, Jaunpur. The session ended with the distribution of participation certificate and tea.

GLIMPSE IN MEDIA:
