
	<p style="text-align: center;">INDIAN INSTITUTE OF INFORMATION TECHNOLOGY, UNA [HP] An Institute of National Importance under MHRD NIT Campus, Hamirpur [HP]-177005</p> <p>Contact No.: 01972-224378 Website: www.iiitu.ac.in</p>	
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30, Nov.'19

INSTITUTE REPORT

A. Establishment of the Institute

The Institute was established in the AY 2014-15 and the first batch of students have passed out in the year July 2018 and have been awarded degrees in the first Graduation Day held on 29, Mar.'19.

The Second batch of students have passed out in the year July 2019 and they will be awarded the degree during the Second Convocation to be held on 30, Nov.'19.

Currently the institute has a student strength of 440 out of which 393 and 47 are male and female students respectively.

The II, III, and Final year students are housed in the NIT Campus, Hamirpur and the I year students are housed in its Transit Campus-II at Chandpur, Haroli, Una.

B. Permanent Campus

The Institute has been allotted, approximately 56 acres of land in village Saloh, Una (HP). The work order for construction of academic and admin block has been issued to the contractor by CPWD.

The construction work is expected to commence in the month of Dec.'19. Further the tender for construction of the hostels for girls and boys has been floated and soon the work order will be awarded to the contractor.

Three branches of Engineering, viz, Computer Science and Engineering, Electronics and Communication Engineering, and Information Technology will be accommodated in the Permanent Campus with a total strength of 810 students. It is expected that the classes of AY 2022-23 may be commenced in the Permanent Campus.

C. Faculty

Faculty members are appointed to teach the courses with the Student to Teacher Ratio of 15:1.

Currently, 14, 08, and 08 faculty members are working in School of Computing, School of Electronics, and School of Basic Sciences.

The Selection Process for the recruitment of permanent faculty members will be initiated in the month of Dec.'19 and expected to be completed by the month of June'20. For the ensuing AY 2020-21 a few permanent faculty members would have joined the institute.

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D. Professor of Emeritus in Mathematics

Prof. Amar Nath Gill of Punjab university on his superannuation has been appointed as the Professor of Emeritus in Mathematics of School of Basic Sciences.

E. Registrar

The Registrar, Prof. Surinder Singh, took charge in the month of July'19 and he is looking after the Transit Campus-II at Chandpur, Haroli, Una (HP).

F. New Curriculum Design

Current II and I year students are studying the new curriculum which has the following highlights:

- Stream Oriented Electives
- One full semester (VI) dedicated to industry internship
- Practical, Project, and Product (PPP) Orientation
- Relative Grading
- Credit transfer from online courses
- Less core subjects and more electives
- Enhancement of Skill set for better employability

G. Activities of Various Associations

Various Technical, Cultural, and sports Associations were inaugurated last year in the month of Mar.'19. This year I year students will also be part of these associations, such as, FORCE, AVESH, HASH, SURGE, AMOGH, YALGAAR, EVMaC, Data Science, and InfoSec.

H. MoU with Himachal Pradesh Technical University (HPTU)

An MoU with Himachal Pradesh University was signed on 22, Oct.'19 for the benefit of students and faculty of IIIT Una.

The highlights of the MoU are as follows:**1. Curriculum Design**

HPTU and IIIT Una will give valuable inputs to the IIIT Una or HPTU in teaching/training methodology and to suitably customize the curriculum so that the students fit into the industrial scenario meaningfully.

2. Workshops/Conferences/Faculty Development Program

Two workshops/Conferences will be organised per academic year (one in HPTU, Hamirpur and one in IIIT, Una). The host institutions will contribute/ raise resources for the workshop. In case funds are available with HPTU or IIITU, then jointly programs may also be conducted as per provisions allowed by the funding agency at the time of conducting of programs.

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3. **Research and Development:** Both Parties have agreed to carry out the joint research activities for the students and Faculty members as per following details:

- a. HPTU, Hamirpur and IIIT, Una would support jointly-supervised M.Tech./PhD students through the School of Engineering and Technology, HPTU and IIITU for the area of common interests/multidisciplinary topics, etc. These students can be supported through funding from outside agencies obtained through HPTU, Hamirpur and IIIT, Una.
- b. HPTU and IIIT, Una have also agreed to work in the area of providing access to library/research Labs for faculty and students who have registered for courses or engaged in joint research.

4. **Skill Development Programs**

HPTU and IIIT Una have agreed to train the students of IIIT Una and HPTU on the emerging technologies in order to bridge the skill gap and make them industry ready.

5. **Expert/Guest Lectures**

HPTU and IIIT Una also have agreed to provide expert lectures/ guest lectures to the students of HPTU and IIIT, Una based on in house requirements.

6. **Placement of Students**

HPTU and IIIT Una have also agreed to share the common placement opportunities during on campus placement drives by the host institutes for their mutual benefits.

I. Software for Child Death Review of GoHP

A software has been successfully designed and developed by 14 students of our Institute under the guidance of faculty members of our institute.

It has been demonstrated and soon it will be put to operation by the GoHP.

J. On Going Sponsored Project

A project title, “Nagarik Rog Pratirakshak: Unified Smart Immunization Coverage Monitoring and Analysis (UniSICMA)” Sponsored by Biotechnology Industry Research Assistance Council (BIRAC), in collaboration with SSNCE, Chennai, Tamil Nadu and our institute at an approximate value of Rs.106/- lakhs with seven Junior Research Fellows is going in our Institute.

K. Project Proposals submitted to MHRD and GoHP

Two project proposals, viz., Fellowship for M. Tech., PhD, and establishment of Artificial Intelligence Technology Park each at an approximate budget of Rs.10/- Cr., have been submitted to MHRD and GoHP, respectively for the Administrative Approval and Expenditure Sanction.

Another proposal on Centre of Excellence in Evolving Technologies, is under preparation for submission to MHRD.

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L. Orientation Program to I year students

Seventeen days Orientation program was arranged from 05-21, Aug.'19 for I year students. 27 activities were conducted by 14 external resource persons alongwith all the internal faculty and non faculty members. Some of the activities are as follows:

- Awareness about the new curriculum, grading, rules of the institute, availability of scholarships, online course, etc.
- Engineer as a Designer
- Awareness on Women and Men Safety and Cyber Security
- Awareness on Health, Mental Health, and Hygiene
- Universal Human Ethics and values
- Entrepreneurship
- Upcoming Trends and challenges in Technology
- Plantation drive

M. Workshop and hands on with interconnecting devices

Two days workshop and hands on with interconnection devices, such as, switches, routers, etc., by Network Bulls was organized during 02-03, Nov.'19 in which 60 students participated.

N. Celebrations

The institute celebrated the following festivals and days in order to comply with the directions of MHRD:

Sl. No.	Date	Activity
1.	21, June'19	Yoga Day
2.	29, Aug.'19	Fit India Movement
3.	01-14, Sept.'19	Swachhata Pakhwada 2019
4.	05, Sept.'19	Teacher's Day
5.	11, Sept.'19-27, Oct.'19	Swachhata Hi Seva
6.	14, Sept.'19	Hindi Diwas
7.	01. Oct.'19	Swachhata Diwas Pledge
8.	07, Oct.'19	Saraswati Pooja
9.	31, Oct.'19	Rastriya Ekta Diwas
10.	04, Nov.'19	Vigilance Awareness Week 2019 "Integrity Way of Life" By Sh.Arjit Sen Thakur, (IPS) S.P. Hamirpur
11.	19-25, Nov.'19	Communal Harmony Campaign Week
12.	26, Nov.'19	Constitution Day/ National Education Day

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O. Guest Lectures and Workshops

The following guest Lectures and workshops were conducted:

Sl. No.	Date	Title	Resource Person
1.	23, April'19	Phase Locking of Large Network	Dr. Viswa Pal Dept. of Physics, IIT Ropar
2.	23-24, Aug.'19	Biotechnology Popularization and Skill Development	Dr. Madan Lal Verma SoBS, IIIT Una
3.	31, Oct.'19	Shaping Smart Machine Buddies	Dr. Saurav Karmakar West Bengal
4.	13, Nov.'19	Campus Recruitment Trends	Prof. A. K. Bakthavatsalam Head, TPO, NIT Tiruchirappalli

P. Appreciations

Ms. Arpana Mehta of Final Year attended Grace Hoppers Celebrations India 2019 during 06-08, Nov.'19, Bengaluru, Karnataka state, which is the Asia's largest gathering of Women Technologies.

Mr. Praveen Kumar and Mr. Prateek, both I year students were appreciated for their participation in Tech festival organized by IIT, Karaghpur.

Q. Publishing of Books/ Chapters

Dr. Madan Lal Verma, Assistant Professor in Biotechnology of SoBS has authored the following two books and one chapter:

1. Nanobiotechnology for sustainable bioenergy and biofuel production
2. Biotechnological production of bioactive compounds
3. A chapter in the book Micobial production of Omega-3 polyunsaturated fatty acids

The above books are to be published by CRC Press, Francis and Taylor, USA, 2020, Elsevier Press, Netherlands Europe, 2019, and Elsevier Press, Netherlands, Europe, respectively.

R. Journal and Publications

The Journal and Conference Publications of our faculty members are as follows:

AY	Journal	Conference
2018-19	10	10
2019-20	26	17

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S. Participation in FDP

All the faculty members were sponsored to attend the following FDP/Workshops conducted by IIT Mandi:

Sl. No.	Date	Activity	Topic
1.	24-25, May'19	Two days Workshop	Curriculum Design
2.	08-12, July'19	Five days FDP	Practicum-I, II, III, IV and Lab assignments

T. Ek Bharat Sreshtha Bharat (EBSB)

IIIT Una has been paired with IIIT, Kottayam, Kerala under EBSB program by MHRD. The objectives of EBSB are as follows:

- To exchange 50 students
- To exchange faculty members
- To become aware of the culture of the paired state
- To organize food festival of the paired state
- To arrange for Learning of the language of the paired state
- To translate the original works such as poem/book in the language of paired state
- To visit the places of importance in the paired state

It is planned to depute 50 students, 17, 17, and 16 from III, II, and I year respectively for the exchange program.

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APPENDIX-I

LIST OF GRADUANDS

B. Tech. 2015-19 BATCH

COMPUTER SCIENCE & ENGINEERING

Sl. No.	Roll No.	Name
1	IITU15101	Charvi Jain
2	IITU15102	Akash Mohanti
3	IITU15103	Jaspreet Kaur
4	IITU15104	Samridhi Gupta
5	IITU15105	Nikita Mittal
6	IITU15106	Milankumar Khunt
7	IITU15107	Rahul Sharma
8	IITU15108	Rajesh Sharma
9	IITU15109	Parth Gambhir
10	IITU15110	Sandeep Kumar
11	IITU15112	Navneet
12	IITU15113	Prashant Kumar Kaushal
13	IITU15114	Abhinav Kushwah
14	IITU15116	Rajeev Ranjan
15	IITU15117	Roshan
16	IITU15118	Sanjeev Kumar Kushwaha
17	IITU15119	Sethi Kunal Ashok
18	IITU15120	Payal Pandey
19	IITU15121	Rajat Dwivedi
20	IITU15122	Ratan Prasad
21	IITU15123	Mohit Sharma
22	IITU15124	Anant Kumar Kabra
23	IITU15125	Shaharyar Shamshi
24	IITU15126	Bishan Lal
25	IITU15127	Raghav Sharma

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ELECTRONICS & COMMUNICATION ENGINEERING

Sl. No.	Roll No.	Name
1	IITU15201	Saurabh Yadav
2	IITU15202	Deepanshu Yadav
3	IITU15203	Bala ji Singh
4	IITU15205	Taniya
5	IITU15206	Sahil Sharma
6	IITU15207	Rajat Jha
7	IITU15208	Arunav Gandhi
8	IITU15209	Dipanshu Sharma
9	IITU15210	Nikhil Singh
10	IITU15211	Aditya Kumar
11	IITU15213	Ashish Kumar Rai
12	IITU15214	Nancy Chauhan
13	IITU15215	Ravi Prakash
14	IITU15216	Sudarshan Singh
15	IITU15218	Utkarsh Bajpai
16	IITU15219	Harshit Kumar Mishra

The following are the medal winners:

Sr. No.	Program	Name of Students	Roll No	Medal
1.	B. Tech. CSE	Ms. Nikita Mittal	IITU15105	Gold
2.		Mr. Parth Gambhir	IITU15109	Silver
3.		Ms. Payal Pandey	IITU15120	Bronze
4.	B. Tech. ECE	Mr. Sahil Sharma	IITU15206	Gold
5.		Ms. Taniya	IITU15205	Silver
6.		Mr. Arunav Gandhi	IITU15208	Bronze

B.Tech. 2014-18 BATCH

ELECTRONICS & COMMUNICATION ENGINEERING

Sl. No.	Roll No.	Name
1.	IITU14224	Pukhraj Saini

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APPENDIX-II

FACULTY PUBLICATIONS

Conference Publications:

1. Suveer Guleria, V. Krushna Kanth, S. Raghavan, "Improved FSS structure based on SIW to change the polarization of Vivaldi antenna", IEEE-INAE workshop on Electromagnetics (IIWE), Thiruvananthapuram, 2018.
2. V. Krushna Kanth, Suveer Guleria, S. Raghavan, "Performance Analysis of FSS based on SIW cavity technology", IEEE International Microwave and RF conference (IMaRC), 2018.
3. Bhuvaneswari Amma N. G. and S. Selvakumar, "VCDeepFL: Vector Convolutional Deep Feature Learning Approach for Identification of Known and Unknown Denial of Service Attacks", IEEE Region 10 Conference TENCON 2018, Ramada Plaza Hotel, Jeju, Korea, Oct. 2018.
4. S. Kumar, R. K. Jha, "A fractional integrator based novel detector for weak signal detection with watermark application", APSIPA, Honolulu, Hawaii, USA, 2018.
5. S. Kumar, R. K. Jha, R. Sharma, A. R. Verma, Y. Singh, "A Robust Sharing Based Encryption Method in Singular Value Decomposition Domain Using Fractional Fourier Transform", ISED, Kochi, 2018.
6. S.Kumar, A. Kumar, and R. K. Jha, "Noise-induced Training for Weak Signal Detection in Neyman-Pearson framework", MNIT-Allahabad, 2018.
7. Verma ML, "Nanobiotechnology advances bioenergy production: Development of effective nanobiocatalytic system(s) through the immobilization of enzymes on functionalized nanomaterials with potential application in cellulose hydrolysis", BECAR 2018 Workshop, 23-24th Jan 2018, IIT Mandi, Himachal Pradesh, 2018.
8. Verma ML and Puri M, "Nanobiotechnology: A tool for improving efficiency of biofuel", 9th Indian Youth Science Congress, 07-9 April 2018, Career Point University Hamirpur, Himachal Pradesh, 2018.
9. Thakur R and Verma ML, "Food bioactives extraction from an underutilized crop of Himalayan Himachal Pradesh", Conference on Doubling the Farmers' Income: Challenges and Strategies, CSK HP Agricultural University, Palampur, 2018.
10. Roopali and Rakesh Kumar, "Ubiquitous Healthcare using Sensor Analyst Systems", 3rd International Conference on Next Generation Computing Technologies, Dehradun, India., 2018 (in press).
11. Payal Pandey, Divyansh Thakur, Bishan Lal Thakur, "Techniques for Behaviour Lie Detection with the Aid of Physiological Signals", International Conference On Advances In Electronics, Electrical & Computational Intelligence, IIIT Allahabad, 2019.

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12. Charvi Jain and Neha Sharma, "Image Captioning using CNN Long Short-Term Memory Network", International Conference on Advances in Electronics, Electrical & Computational Intelligence, Indian Institute of Information Technology-Allahabad, Prayagraj, India, 2019.
13. Neha Sharma and Charvi Jain, "Characterization of Facial Expression using Deep Neural Networks", International Conference on Advanced Computing & Communication Systems (ICACCS), Coimbatore, Tamilnadu, India, 2019.
14. Gurpreet Kaur and Gurmeet Kaur, "Comparison of Algorithms used for training of Artificial Neural Network based Nonlinear Equalizer in a CO-OFDM system", IIIT Allahabad, 2019.
15. Hemlata, Manoj Sachan, Shailendra Kumar Singh, "Personality Detection using Handwriting Analysis: Review", International Conference on Advances in Computing, Electronics and Communication-ACECE 2018, Hotel G-Tower, Kuala Lumpur, Malaysia, 2018.
16. S. Priya and S. Selvakumar, "Classifier Performance Evaluation of Phishing Detection Model on Optimal Number of Clusters", International Conference on Sustainable Computing in Science, Technology, and Management (SUSCOM-2019), Amity University, Jaipur, Feb. 2019.
17. Bhuvaneswari Amma N. G. and S. Selvakumar, "DeepAD: A Deep Learning Framework for Anomaly Detection in Large Scale Networks", IEEE International Conference for Convergence in Technology (I2CT 2019), Hotel Taj Gateway, Pune, Mar. 2019.
18. Bhuvaneswari Amma N. G. and S. Selvakumar, "Feature Correlation Map based Statistical Approach for Denial of Service Attacks Detection", International Conference on Computing, Engineering, and Design (ICCED 2019), Nanyang Technological University, Nanyang Avenue, Singapore, Apr. 2019.
19. Bhuvaneswari Amma N. G. and S. Selvakumar, "RumorDetect: Detection of Rumors in Twitter using Convolutional Deep Tweet Learning Approach", Springer International Conference on Computational Vision and Bio Inspired Computing (ICCVBIC 2019), Hotel Arcadia, Coimbatore, Tamil Nadu, Sep. 2019.
20. Elakkiya E. and S. Selvakumar, "Initial Weights Optimization using Enhanced Step Size Firefly Algorithm for Feed Forward Neural Network applied to Spam Detection", IEEE Region 10 Conference TENCON 2019, Grand Hyatt Kochi Bolgatti, Kochi, Kerala, Oct. 2019.
21. S. Priya and S. Selvakumar, "A Framework for Detecting Phishing Websites using GA based Feature Selection and ARTMAP based Website Classification", Third International Conference on Computing and Network Communications (CoCoNet'19), Indian Institute of Information Technology and Management-Kerala (IIITM-K), Technopark/Technocity Campuses, Trivandrum, Kerala, Dec. 2019.
22. S. Kumar, N. Chauhan, R. K. Jha Suprathreshold Stochastic Resonance for Gamma Noise with Watermarking Application ICNF-2019, Swizerland 2019.

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23. R. K. Jha, B. Soni, S. Kumar, V. Verma Radon Transform and Dynamic Stochastic Resonance based Technique for Line Detection from Noisy Images, ICNF 2019, Swizerland, 2019.
24. R. K. Jha, O.Krishna, S. K. Pandey, S. Kumar, V. Verma, “Dynamic Stochastic Resonance Based Blocking Artifacts Removal from Com- pressed Images in DCT Domain”, ICNF- 2019, Swizerland, 2019.
25. S. Kumar, S. Chauhan, G. Sundaram, M. CHouk- shey, and R. K. Jha, “An FPGA Based Practical Implementation of Stochastic Resonance For Image Enhancement”, ICNF-2019, Swizerland, 2019.
26. S. Kumar, T.Singh, R. K. Jha, M. A. Rahman, “Randomness Assists in Wireless Connectivity, ICNF 2019, Swizerland, 2019.
27. S. Kumar, Akshita and R. K. Jha, “Analysis, Diagnosis and Correction of Rain Streaks”, TENCON-2019, Kochi, Kerala, 2019.

Journal Publications:

1. Divyansh Thakur, Yugal Kumar, “Real Time Monitoring of Valeriana Jatamansi Plant for Growth Analysis”, Procedia Computer Science, Elsevier, 2018.
2. Bishan Lal Thakur, Divyansh Thakur, Payal Pandey, “A Survey based on Machine Learning Approaches for Detection of Human Behavioural Lie using physiological sensors and Face Recognition System”, International Journal of Computer Sciences and Engineering, 2018.
3. Gurpreet Kaur and Gurmeet Kaur, “Nonlinearities compensator based on SORBFNN in ultra-long-haul high-capacity CO-OFDM systems”, SPRINGER, 2018.
4. Gurpreet Kaur and Gurmeet Kaur, “Performance analysis of Wilcoxon based machine learning nonlinear equalizers for coherent optical OFDM”, SPRINGER, 2018.
5. Nitish Katal and Shiv Narayan, “Design of Optimal QFT Controller and Prefilter for Buck Converter Using Metaheuristic Algorithms”, Modelling and Simulation in Engineering, 2018.
6. B. Panna, S. Kumar, R. K. Jha, “Image encryption based on block-wise fractional fourier transform with wavelet transform”, Taylor & Francis, 2018.
7. Verma ML, “Critical evaluation of toxicity tests in context to engineered nanomaterials: An introductory overview”, Taylor and Francis, 2018.
8. Baradhwaj Coleppa, Satendra Kumar, and Agnivo, “Sarkar Fermiophobic gauge boson phenomenology in 221 Models, Phys. Rev. D, 2018.
9. Roopali and Rakesh Kumar, “Technological aspects of WBANs for health monitoring: a comprehensive review”, Wireless Networks, pp. 1-33, 2018.
10. Roopali and Rakesh Kumar, “CHS-GA: An Approach for Cluster Head Selection using Genetic Algorithm for WBANs”, REV-2017, New York, 2018.
11. Divyansh Thakur, Yugal Kumar, “Applicability of Wireless Sensor Networks in Precision Agriculture”, Wireless Personal Communications, Springer, 2019.

Contd. ... (12)

12. Divyansh Thakur, Yugal Kumar, "Smart Irrigation and Intrusions Detection in Agricultural Fields Using I.o.T.", *Procedia Computer Science*, Elsevier, 2019.
13. Divyansh Thakur, "Measuring Environmental Parameters and Irrigation for Rose Crops using Cost Effective WSNs Model", *International Journal of Agriculture Innovation, Technology and Globalisation*", Inderscience, 2019 (Accepted).
14. Gurpreet Kaur and Gurmeet Kaur, "Nonlinearities mitigation with Fuzzy Neural Networks using a machine learning algorithm in a CO-OFDM system", *IET (The Institution of Engineering and Technology)*, 2019.
15. Parvesh Antil, Sarabjit Singh, Alakesh Manna, Sundeep Kumar and Nitish Katal, "Taguchi and Multi-Objective Genetic Algorithm based Optimization during ECDM of SiC/Glass-fibers Reinforced PMCs", *Indian Journal of Engineering and Material Sciences*, 2019. (In Press).
16. Nitish Katal and Shiv Narayan, "Optimal Design of QFT Controller for Pneumatic Servo Actuator System using Multi-objective Genetic Algorithm", *International Journal of Advanced Intelligence Paradigms*", 2019 (In Press).
17. Bhuvaneswari Amma N. G. and S. Selvakumar, "Deep Radial Intelligence with Cumulative Incarnation Approach for Detecting Denial of Service Attacks", *Elsevier Neurocomputing*, Mar. 2019.
18. Elakkiya E. and S. Selvakumar, "GAMEFEST: Genetic Algorithmic Multi Evaluation Measure based Feature Selection Technique for Social Network Spam Detection", *Springer Multimedia Tools and Applications*, Oct. 2019.
19. S. Kumar, R. K. Jha, "Noise-induced resonance and particle swarm optimization-based weak signal detection", *Springer*, 2019.
20. S. Kumar, R. K. Jha, "FD-based detector for medical image watermarking" *IET*, 2019.
21. S. Kumar, R. K. Jha, "Weak signal detection using stochastic resonance with approximated fractional integrator", *Springer*, 2019.
22. S. Kumar, B. Panna, R. K. Jha, "Medical image encryption using fractional discrete cosine transform with chaotic function", *Springer*, 2019.
23. S.Kumar, A.Kumar, R. K. Jha, "A novel noise-enhanced back propagation technique for weak signal detection in Neyman-Pearson framework", *Springer*, 2019.
24. Verma ML, Kumar S, Das A, Randhawa JS, and Chamundeeswari M, "Chitin and chitosan-based support materials for enzyme immobilization and biotechnological applications", *Springer Environmental Chemistry Letters*", 2019 (Accepted on 9 October 2019).
25. Verma ML, Rao NM, Barrow CJ, and Puri M, "Suitability of recombinant lipase immobilised on functionalised magnetic nanoparticles for fish oil hydrolysis", *MDPI/Catalyst Catalysts*, 9, 420. 2019.
26. Chamundeeswari M, Jeslin J, and Verma ML, "Nanocarriers for drug delivery applications", *Environmental Chemistry Letters*, Springer, 17(2):849-865, 2019.

Contd. ... (13)

27. Verma ML, Sharma S, Saini R, Rani V and Kushwaha, "Bioflavonoids: synthesis, functions and biotechnological applications", Elsevier/Biotechnological production of bioactive compounds. Pp 69-105, Elsevier Press, Netherlands, Europe, 2019.
28. Verma ML, Kumar P, Sharma S, Dhiman K. Verma AD, "Gold nanoparticle-mediated delivery of therapeutic enzymes for biomedical applications", Nanoscience in Medicine Vol. 1, pp 1-32. Springer Nature Switzerland, 2019.
29. Rani V and Verma ML, "Biosensors applications in the detection of heavy metals, polychlorinated biphenyls, biological oxygen demand, endocrine disruptors, hormones, dioxin, phenolic and organophosphorus compounds", Nanosensors for Environmental Applications, pp 1-53. Springer Nature, 2019.
30. Verma ML, "Biotechnological applications of lipases in flavour and fragrance ester production", Microbial Technology for the Welfare of Society. Microorganisms for Sustainability, vol 17. Pp 1-22, Springer, Singapore, 2019.
31. Verma ML, Kumar S, Jeslin J, Dubey NK, "Microbial production of biopolymers with potential biotechnological applications", Biopolymer-Based Formulations: Biomedical and Food Applications, Elsevier Publisher, 2019.
32. Verma ML, Sahota S, Jana AK, "Potential applications of nanobiocatalysis for sustainable biofuels production", Pure and Functionalized Carbon Based Nanomaterials: Analytical, Biomedical, Civil and Environmental Engineering Applications, CRC Press, Francis and Taylor, USA, 2019.
33. Verma ML, Sharma S, Dhiman K, Jana AK, "Microbial production of nanoparticles: mechanisms and applications", Microbial Nanobionics: Volume 1, State of Art, Springer Nature, 2019.
34. Verma ML, Kumar P, Sharma D, Verma AD, Jana AK, "Advances in nanobiotechnology with special reference to plant systems", Plant Nanobionics, Nanotechnology in the Life Sciences, Springer Nature, 2019.
35. Satendra Kumar, Poullose Poullose, Rafiqul Rahman, and Ritesh K. Singh, "Measuring Higgs self-couplings in the presence of VVH and VVHH at the ILC", Int. J. Mod. Phys. A, 2019.
36. Ram Murti and S. Baskar, "Weakly nonlinear ray theory in inhomogeneous moving media filled with polytropic gases", Wave Motion (Elsevier), 2019.

Book / Book Chapters:

1. Verma ML, Book: Nanobiotechnology for sustainable bioenergy and biofuel production, CRC Press, Francis and Taylor, USA, 2020.
2. Verma ML and Chandel AK, "Book: Biotechnological production of bioactive compounds", Elsevier Press, Netherlands, Europe, 2019.
3. Verma ML, Kishore K, Sharma D, Kumar S, Sharma, "Book Chapter: Microbial production of omega-3 polyunsaturated fatty acids", Elsevier/ Biotechnological production of bioactive compounds. Pp 293-326, Elsevier Press, Netherlands, Europe, 2019.

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APPENDIX-III

DETAILS OF ORIENTATION PROGRAMS

Sl. No.	Activity/Title/Topic	Resource Person	Description
1.	B.Tech. Curriculum	Prof. S. Selvakumar Director, IIIT Una	<ul style="list-style-type: none"> Salient features of B.Tech. Curriculum was informed to the students
2.	Engineer as a Designer	Prof. T A Gonsalves Director, IIT Mandi	<ul style="list-style-type: none"> Evolution of Technology was discussed
3.	Fundamentals of Engineering and Sciences	Dr. Srikant Srinivas IIT Mandi	<ul style="list-style-type: none"> Exploring engineering was discussed Hands on sessions were conducted on exploring engineering
4.	Fire Safety Mock Drill	Mr. Jaipal Singh and Team	<ul style="list-style-type: none"> Different types of earthquake and sources of fire were explained A practical fire safety drill was demonstrated
5.	Awareness on Safety and Cyber Security Women & Men Safety	Sh. Sandeep Kumar, IAS DC Una	<ul style="list-style-type: none"> Safety/ Security of Women & Men was introduced to the students The potential dangers of computer security along with solutions were discussed
6.	Awareness on Health and Hygiene	Dr. Nikhil, CMO, Una	<ul style="list-style-type: none"> Following points were discussed: <ul style="list-style-type: none"> First aid Drug abuse Alcohol prevention
7.	Awareness about Mental Health	Ms. Richa Singh Co-Founder, YourDost	<ul style="list-style-type: none"> Counselling session for the emotional wellness of students was conducted
8.	SPIC MACAY cultural performance	Mr. Sanjeev Shanker and Mr. Ashwani Shanker	<ul style="list-style-type: none"> Classical Flute Music show was performed
9.	Universal Human Values	Dr. Sudheer Pandey IIT Mandi	<ul style="list-style-type: none"> Human values and ethics were discussed
10.	Space Technology	Dr. A. C. Mathur Ex-Director, MDAD, ISRO	<ul style="list-style-type: none"> Development in Space Technology was explained Various space Programs in India has been informed
11.	Entrepreneurship	Mr. Saurabh Mittal Catalyst IIT Mandi,	<ul style="list-style-type: none"> Lecture on Technology Business Incubation Strategies for start-up for entrepreneurs were discussed
12.	Upcoming Trends and Challenges in Technology	Dr. Balwinder Singh Joint-Director, CDAC Mohali	<ul style="list-style-type: none"> Evolution of computer technology from ICs and development in IoT were discussed
13.	Ethics and Values	Sh. Krishna Murari Retd I.A.S.	<ul style="list-style-type: none"> Ethics and Values (context) and Relationship at Personal and workspace were discussed

Contd. ... (15)

14.	Self Defense Training	Mr. Gaurav Sharma	<ul style="list-style-type: none"> • Training on Self Defence Session was conducted
15.	Hostel Rules & Regulations	Dr. Satendra Kumar	<ul style="list-style-type: none"> • Various Hostel Rules & Regulations were introduced
16.	Introduction to the clubs	Ms. Ishita Vaidya	<ul style="list-style-type: none"> • Knowledge about various clubs of our institute was introduced
17.	Mentor- Mentee groups - Introduction within the group	Ms. Manu Chauhan	<ul style="list-style-type: none"> • Introduction to Mentor- Mentee groups was presented • Different Mentor- Mentee groups were announced
18.	Awareness about Fellowships	Dr. Priyabrat Garanayak	<ul style="list-style-type: none"> • Eligibility, application procedure, and different schemes (both central and state) for availing different scholarships were introduced
19.	Awareness about Online Courses	Ms. Minakshi Shastri	<ul style="list-style-type: none"> • Different online courses (NPTEL/ SWAYAM/ MOOCs) were introduced
20.	Literary activities	Ms. Manu Chauhan	<ul style="list-style-type: none"> • Different activities were performed
21.	Nano Bio-Engineering	Dr. Madan Verma	<ul style="list-style-type: none"> • Role of Nanotechnology in Bio-energy was discussed
22.	Diagnostic Test	Prof. A. N. Gill Dr. Neha Sharma Ms. Minakshi Shastri Ms. Manu Chauhan	<ul style="list-style-type: none"> • Diagnostic Test was conducted to understand the level of amount of knowledge students possess in the subject of Mathematics, English, and Computer Science
23.	Bridge Course	Prof. A. N. Gill Dr. Neha Sharma Ms. Minakshi Shastri Ms. Manu Chauhan	<ul style="list-style-type: none"> • Bridge course was conducted to give an insight of basic skills required in subjects of Mathematics, English, and Computer Science
24.	UHV Sessions	Ms. Gurpreet Kaur Dr. Priyabrat Garanayak Dr. Rama Gaur Ms. Manu Chauhan	<ul style="list-style-type: none"> • Universal Human values were discussed • Difference between Competition, Co-operation, and Excellence was explained with Hands on activities
25.	Exploring Engineering	Dr. Priyabrat Garanayak Dr. Gurinderbir S. Grewal Dr. Satendra Kumar Dr. Madan Verma	<ul style="list-style-type: none"> • Hands on sessions were conducted on exploring engineering
26.	Industrial Visit/ Sightseeing	Dr. Gurinderbir S. Grewal Dr. Satendra Kumar Ms. Gurpreet Kaur Ms. Minakshi Shastri	<ul style="list-style-type: none"> • Shri Anandpur Sahib was visited with all the students
27.	Plantation Drive	Dr. Madan Verma	<ul style="list-style-type: none"> • Different plants were planted
28.	Feedback Session	Dr. Priyabrat Garanayak	<ul style="list-style-type: none"> • Feedback about the whole orientation program was conducted

Contd. ... (16)

ORIENTATION PROGRAM 05 - 21, Aug.'19



Lighting Kuthu Vilakku



Lighting Kuthu Vilakku



Director's Address



Interactions with seniors



Registrar's Address



Welcoming Director IIT Mandi

Contd. ... (17)



Welcoming Dr. Shrikant IIT Mandi



Dr. Shrikant Interacting with students



Welcoming Himachal Fire Service Officers



Fire Extinguishing demo to students by HFS Officers



Welcoming Deputy Commissioner Una



Session with DC Una

Contd. ... (18)



*Co-Founder Yourdost Ms. Richa
Interacting with students*



*Welcoming Dr. Sudhir Pandey of IIT
Mandi*



*Dr. Sudhir Pandey of IIT Mandi,
interacting with students*



SPIC MACAY performance



Coding Ninjas Session



Isha Yoga Session

Contd. ... (19)



Isha Yoga Session



Students in Computer Lab



Dr. A. C. Mathur addressing students



Mr. Saurabh Mittal Interacting with students



Senior's Performance



Senior's Performance

Contd. ... (20)



Independence Day



Director's address on Independence Day



Independence Day Celebration



Independence Day Celebration



Raksha Bandhan Celebration



*Shri. Krishna Mohan, IAS (Retd.)
addressing students*

Contd. ... (21)

PLANTATION DRIVE



BIOTECHNOLOGY WORKSHOP 23-24, Aug



Welcoming the Expert



Session in Progress



Session in Progress



Participants of the Workshop

Contd. ... (22)

PLASTIC CLEANLINESS DRIVE



Contd. ... (23)

AWARENESS SESSION PLASTIC WASTE FREE CAMPAIGN



Contd. ... (24)

RASTRIYA EKTA DIWAS



Contd. ... (25)



SARSWATI POOJA



Contd. ... (26)

VIGILANCE AWARENESS WEEK 2019



GUEST LECTURE ON FUTURE OF CAMPUS RECRUITMENT TRENDS



Contd. ... (27)



WORKSHOP ON ETHICAL HACKING



Contd. ... (28)

MOU SIGNING

MoU between HPTU Hamirpur and IIIT Una

