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NEWSLETTER FROM IIT PATNA

Impulse



From the Director's Desk

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Dear Friends



Indian Institute of Technology Patna is an Institution of National Importance and a new addition to the hallowed IIT System that has proven its worth in last 50+ years. The alumni of IIT are internationally known for their caliber and contribution. Since its inception in 2008, IIT Patna- like its young as well as established peers- has pursued excellence with steadfast determination.

IITP has 6 Engineering Disciplines: Civil and Environmental Engineering, Chemical and Biochemical Engineering, Computer Science and Engineering, Electrical Engineering, Mechanical Engineering and Material Science and Engineering; 2 Science Disciplines: Physics and Chemistry; Humanities and Social Sciences; Mathematics and 3 Centers of Excellence: Energy and Environment; Strategic Materials; Advanced Systems Engineering. Its faculty members are experts in their respective fields. The thriving PhD, M.Tech and B.Tech programs of IITP see the students and faculty publish prolifically, win competitions, come up with innovations and build societal awareness.

For impact, technology has to understand its vital links with (i) Humanities and Social Sciences, (ii) Mathematics and (iii) Natural Sciences. Technology can change life if it can acquire "Perspective" from Humanities and Social Sciences, "Technique" from Mathematics and "Foundations" from Sciences. In IITP, we will strive to achieve this 4-way harmony of Technology, Humanities and Social Sciences, Basic Sciences and Mathematics. The original charter of new IITs, viz., interdisciplinary research and teaching will thereby be addressed.

IITP is strategically placed, geographically speaking. The stretch from Gujarat to Manipur has 11 IITs (Gandhinagar, Jodhpur, Mandi, Ropar, Roorkee, Delhi, Kanpur, Patna, Kharagpur, Bhubaneswar and Guwahati) and a large number of NITs and renowned universities. This sets up a tremendous powerhouse of knowledge and high quality human resource. Additionally, the state of Bihar is rich with tradition and resources, emphasizes education, is blessed with the fertile Gangetic plain and abundant sunlight. This paves way for immense societal impact through agriculture and energy technology, amongst many other possibilities.

IITP is set to move to its brand new campus at Bihta, a place with history, about 25 KM from main city Patna. The sprawling 500 acre campus houses 4 academic complexes for the departments, a Class Rooms Complex, Faculty, Staff and Student Residential quarters, Hospital and School and an impressive Administrative building. The 2015 autumn session in IITP starts from the new campus.

At this juncture of history, IIT Patna is poised for great things.

Pushpak Bhattacharyya

Editorial

We stand on the threshold of a new academic year, a fresh beginning and myriad opportunities, poised as it were to add to the innovative dimensions of technical education. IIT Patna is taking a significant leap in terms of moving to its permanent campus and therefore it's a moment to revisit our endeavours and achievements in the past few months. The entire IITP family is rejoicing to see their dreams being fructified finally.

The editorial collective of *Impulse* extends a warm welcome to our new students. We are a young institution but our participation in teaching, research, sports, literature and culture is a journey that will shape us into well groomed knowledge workers. *Impulse*, the newsletter from IIT Patna is a portal that enables us to assess our academic achievements that will further inspire us not only to contribute to our personal growth but also to feel elated at times.

Apart from showcasing the ongoing projects, placements, various internships and scholarships of IIT Patna fraternity, this issue of *Impulse* also highlights our contribution to social welfare schemes. The UBA Cell of the institute is playing a seminal role in implementing the ethos of the initiative started by Ministry of Human Resource Development, Government of India to uplift and change the face of rural India in the local and the global contexts.

Finally, the editorial team extends its gratitude to all the contributors for providing the required information about their academic achievements and their rewarding moments. We also laud the efforts of our students in helping IITP reach new milestones not only in terms of their techno-savvy skills but also for their innovative literary sparks. We wish that this issue of *Impulse*, 2015 will be as much a pleasure for you to browse, as much as it was for us to compile.

Editors: Dr. Binod Mishra | Dr. Priyanka Tripathi, School of Humanities and Social Sciences

BoGs of IIT Patna



Mr. Ajai Chowdhry
Chairman



Prof. Pushpak Bhattacharyya
Director IIT Patna



Prof. Amitabha Ghosh
Former Director, IIT Kharagpur



Prof. Sriman Kr. Bhattacharya
Director, CBRI Roorkee



Prof. J.N. Sinha
Professor & Coordinator, Department
of Electrical Engineering, IIT Patna



Prof. Ajay Chakrabarty
Vice-Chancellor, BIT Mesra



Dr. T. Mukherjee
Ex-Deputy M D
Tata Steel, Jamshedpur



Prof. Swapan Majumdar
Chairman
IWC, IIT Patna



Member
Principal Secretary,
Department of Science & Technology,
Government of Bihar



Mr. Subhash Pandey
Registrar, IIT Patna



Member
Principal Secretary,
Department of Science & Technology,
Government of Jharkhand

New Appointments- Teaching



Dr. Prashant Kumar
Ramanujan Faculty Fellow

Visits Abroad

- **Dr. Ashok Singh Sairam** visited Hochschule Offenburg University of Applied Sciences, Germany from June 9 -July 1, 2015 with regard to the joint Indo-German (DST-DAAD) sponsored project titled "Tunable Synchronization of Spatially Distributed Cyber-Physical Systems". During his stay other than working on the joint research activity, he also gave lectures at the university on "Landscape of New IITs" and his research topic.
- **Dr. Awalendra K. Thakur** delivered a lecture on, "Supercapacitor Response of Tin Sulfide Electrodes" at the 20th International conference on Solid State Ionics held at Keystone, Colorado, USA during June 14-19, 2015
- **Dr. Preetam Kumar** visited London, United Kingdom to present his paper entitled "CI/DS-CDMA scheme for Autonomous Underwater Vehicle Communication" in IEEE International Conference on Communication (ICC-15), during June 8–12, 2015.
- **Dr. Sanjoy Kumar Parida**, Assistant Professor, Department of Electrical Engineering, is visiting Center for Energy Systems and Research, Tennessee Technological University, Cookeville, TN, USA during May 7, 2015 to August 7 2015.
- **Dr. Asif Ekbal** visited HULTECH team of University of Caen, France for one month as a visiting scientist during May 23 - June 23, 2015.
- **Dr. Asif Ekbal** attended and presented paper in 20th International Conference on Applications of Natural Language to Information Systems (NLDB-2015) held at Passau, Germany, 17-19, June, 2015
- **Dr. Sriparna Saha** has visited HULTECH team of University of Caen, France for one month during May 23- June 23, 2015.
- **Dr. Priyanka Tripathi** attended and presented paper in WEI Education and Humanities Academic Conference at Harvard University, Boston, USA, June 8-10, 2015.
- **Dr. Priyanka Tripathi** attended and presented paper in Sixth International Conference on Consciousness, Theatre, Literature, & the Arts, St. Francis College, New York, USA, June 10-12, 2015

Visitors to IIT Patna

Sr. No.	NAME OF THE SPEAKER AND AFFILIATION	TITLE OF TALK	DATE
1.	Dr. Vikas Sinha from UES, Inc., on-site Scientist at Air Force Research Laboratory, Wright-Patterson Air Force Base, OH, USA	Thermodynamic Considerations of Vacuum Levels for Simulating Internal Fatigue Crack Growth in Titanium Alloys and Nickel-base Superalloys	12.01.2015
2.	Dr. Abhishek Kumar, Yale School of Medicine	Light Sheet Fluorescence Microscope: Imaging Faster and Gentler.	10.03.2015
3.	Dr. Krishna Etika, IIT Madras	Tailoring Nanoparticle Assembly in Liquid Suspensions and Solid Composites	15.04.2015
4.	Prof. Sunil Agrawal, Department of Mechanical Engineering & of Rehabilitation and Regenerative Medicine, Columbia University, New York, USA	Can Robots help Retrain Functions of Neural Impaired Adults and Children?	22.04.2015
5.	Professor M.D. Vemuri, Centre for the Study of Regional Development, Jawaharlal Nehru University, New Delhi	Myths About Population Of India	27.04.2015
6.	Professor Sushil K. Prasad, Georgia State University, USA	Geospatial and temporal data analysis	

Invited Talks

- **Nishchal N. K.**, "Digital Holography and Image Encryption Techniques", 15th Refresher Course, University Department of Physics, B. R. A. Bihar University, Muzaffarpur, Feb. 04, 2015.
- **Nishchal N. K.**, "Basics of Optics: Interference, Diffraction, and Polarization," 15th Refresher Course, University Department of Physics, B. R. A. Bihar University, Muzaffarpur, Feb. 03, 2015.
- **Srivastava Prashant Kumar**, "Mathematical Modeling in Epidemiology: Tools, Analysis & Models", at Tutorial Workshop on Mathematical Epidemiology in 2nd International Conference on Mathematics and Computing, HIT Haldia, Jan. 5-10, 2015.
- **Srivastava Prashant Kumar**, "Mathematical Modeling of HIV Infection: in vivo" at ICBSII-2015, SSN College of Engineering, Chennai, Mar. 19-21, 2015.
- **Srivastava Prashant Kumar**, "Mathematical Models of HIV and Immune System: in vivo" at Mini Workshop on Bio-mathematics, BHU Varanasi, Mar. 28-30, 2015.
- **Srivastava Prashant Kumar**, "Mathematical Models using Differential Equations" at Undergraduate Training Programme on Differential Equations under the auspices of NPDE-TCA IIT Bombay, held at LNMIIT Jaipur, May 18 - June 06, 2015.
- **Prakash Om**, "Introduction to Rings & Modules" for M. Sc. Ist year, M. Sc. IInd year and PhD students of University of Rajasthan, Jaipur, Apr. 20, 2015.
- **Prakash Om**, delivered an invited lecture on Chinese Remainder Theorem for M. Sc. Ist year students of Banasthali Vidyapith, Banasthali, Apr. 18, 2015.
- **Prakash Om**, delivered an invited lecture on Skew Polynomial Rings for M. Sc. II year and Ph. D. students of Banasthali Vidyapith, Banasthali, Apr. 19, 2015.
- **Samanta Sujoy Kumar**, "Microwave Assisted Material Processing", at the IEEE International Conference on Electrical, Electronics, Signal Communication and Optimization (EESCO-2015), Vignan's Institute of Information Technology, Visakhapatnam, Jan. 25, 2015.
- **Kumar Amit**, delivered an invited lecture at International Society of Chemical Biology-Conference-2015, CDRI-Lucknow, Feb. 25-28, 2015.
- **Tripathi Priyanka**, delivered an invited lecture on Public Policy and its role in Women's Development in a one day seminar organized by PUCL, Jamshedpur in association with Women's College, Jamshedpur, Apr. 04, 2015.
- **Raj Rishi**, served as a Session Chair during the 9th International Conference on Boiling and Condensation Heat Transfer, Boulder, Colorado, Apr. 26-30, 2015.
- **Raj Rishi**, delivered an invited lecture during SEISMECH 2015, The Annual Technical Symposium of the Department of Mechanical Engineering, IIT Guwahati, Mar. 2015.
- **Kar M**, "Magnetic Three Vectors and Magnetic Materials", D.A.V. Public School, Hazaribag, Apr. 11, 2015.
- **Kar M**, "How to Teach Physics", D.A.V. Public School, Mar. 24, 2015.
- **Das Neeladri**, participated as an Invited Speaker in the International Symposium on Polymer Science and Technology (MACRO 2015) at Indian Association for the Cultivation of Science, Kolkata, India, Jan. 23-26, 2015.
- **Mishra Binod**, delivered an invited talk entitled "Soft Skills in Classroom Teaching" in Santaji Mahavidyalaya Nagpur, India, on 17th January 2015

Sponsored Projects

NAME OF PI	DEPARTMENT	TITLE	SPONSOR
Dr. Rishi Raj Dr. Ajay D. Thakur	ME	Contact Angle Goniometer, X-Ray Diffractometer (XRD) and Field Emission Scanning Electron Microscoper with EDAX for 24 nos of sample characterization	NIT Agartala
Dr. Dinesh Kumar Kotnees	MSE	Improvement of low temperature performance and room temperature physical properties of chloroprene rubber (CR) by blending with silicone rubber based compounds and nanomaterials	DENKA
Dr. Atul Thakur	ME	Human Powered Vehicle Challenge	IIT PATNA
Dr. Karali Patra	ME	Soft active dielectric elastomers for human motion-based energy harvesting	DST
Dr. Aditya Raj	HSS	Unnat Bharat Abhiyan Cell of IIT Patna	IIT PATNA
Prof. J.N Sinha	EE	"Visvesvaraya PhD scheme for Electronics and IT"	DEITY
Dr. Avik Samanta Dr. Subrata Hait	Civil	Quality Assurance of Construction Materials of Agricultural College, Kishanganj, Bihar	BSBCL
Dr. Manabendra Pathak	ME	SAE INDIA SUPRA - which involves designing, manufacturing and fabrication of a formula one car.	IIT PATNA
Dr. Ashok Singh Sairam	CSE	Bandwidth estimation and hop-to-hop capacity estimation algorithm(s)	MSPL
Dr. Somnath Roy	ME	Technology Gap Analysis Study for the Rice Milling Machinery Cluster in Raxaul, Bihar	TIFAC
Dr. Somnath Roy	ME	Technology Gap Analysis Study for the Rice Milling Cluster in Lakhisarai, Bihar	TIFAC
Dr. Pushpak Bhattacharyya	CSE	IIT Bombay- IIT Patna joint project on " Natural Language Processing & Machine Learning	IIT BOMBAY
Dr. Ashok Singh Sairam	CSE	Tunable Synchronization of Spatially distributed Cyber-physical Systems	DST
Dr. Rishi Raj	ME	Enhancement of Boiling Heat Transfer via the Suppression of Coalescence in Microgravity	ISRO
Dr. Mayank Tiwari , Dr. Preetam Kumar, Dr. K.C Ray	IIT Patna	Incubation Center for development of ESDM Industry with focus on medical electronics.	DEITY
Dr. Amit Kumar	Chemistry	Functionalization of the Carbohydrates: Designing New Strategies for the Synthesis	SERB-DST
Dr. Amit Kumar	Chemistry	Imidates: A New Class of N-H Directing for C(sp ²)-H Activation and Tools for Synthesis of Highly Functionalized Heterocycles	CSIR-DELHI
Dr. Raju Halder	CSE	Information Leakage Analysis of Database Query Languages	CSIR-DELHI

Workshop and Short Term Courses

National Conference on Sustainability and Development: Implications of ELT for Individual, Society and Ecology (3-4 April, 2015)

The School of Humanities and Social Science, IIT Patna organized a National Conference on 'Sustainability and Development: The Implications of ELT for Individual, Society and Ecology' on 3rd & 4th April 2015. The conveners of the conference were Dr. Binod Mishra and Dr. Smriti Singh. Dr. Mishra introduced the theme of the conference. The objective of the Conference was to bring together teachers, researchers and thinkers in the field of English language and literature together and discuss how the teaching of English can lead to the development of the society and individual at large, a development which balances growth with the environment in which we live, a development which will not compromise with our ecology, a development which will not just be centered on economic growth but will include all aspects of life. The teaching of English from the grass root level till the level of higher education is the key to sustainable development.

The Guest of Honour, Prof. J.P. Singh, former Vice-Chancellor of Lalit Narayan Mithila University, Darbhanga, in his address highlighted the various facets of the English Language and talked of its ever-changing nature due to which it has spread all over the world. The keynote address was delivered by Prof. R.K. Singh from Indian School of Mines, Dhanbad. Prof. Singh talked about the teaching of English for specific purpose and highlighted the teaching of English language in technical institutes. Prof. Nawal K. Choudhary, Principal, Patna College and Prof. J.N. Sinha, Senior Professor also graced the occasion. Other prominent speakers who encouraged participants of SDIELT included Prof. A.N. Dwivedi (Allahabad) Dr. P.D. Nimsarkar (R.T.M Univ. Nagpur), and Dr. Sanjay Parihar(OPJIT, Raigarh) etc. The conference had papers on diverse issues ranging from cultural and cross-cultural communication, Humanitarian approach to ELT, English for Specific Purpose (ESP) to papers dealing with the role of Psychology in language learning and the role of English in the world of ITES. More than 100 participants from different states presented their papers in this two days' conference. The conference also witnessed the book release by several participants, one among them being an IITP student. The valedictory address was delivered by Prof. Shamshad Hussain, retired professor of Psychology, Patna University. In his address Prof. Hussain emphasized the role that language plays in our lives. He also mentioned how words can lead to communication gap and discussed at length the importance of non-words during communication.



Lighting of the lamp



Dr. Binod Mishra, Co-ordinator HSS,
Introducing the conference theme



Guests on the Dias - Prof. R.K.Singh Prof. N.K. Choudhary, Prof. J.P. Singh
Prof. J.N. Sinha, Dr. Binod Mishra, Dr. Smriti Singh (Right to Left)



Participants and organizers



Audience



Prof. Shamshad Hussain distributing
certificates after the Valedictory

Short Term Course organized by VLSI & Embedded System Lab Department of Electrical Engineering during 25th - 30th May 2015 on “FPGA Based System Design”

Department of Electrical Engineering, IIT Patna organized a short term course entitled “FPGA Based System Design” during 25th - 30th May 2015. The short term course was inaugurated by the chief guest Prof. Aurobinda Routray, IIT Kharagpur, Prof. Mayank Tiwari, Coordinator SRIRU IIT Patna, Prof. J. N. Sinha, Coordinator Electrical Engineering Department and patron of this short term course. The main objective of this summer course was to provide an opportunity for students, faculty from academic Institutions, engineers and scientists from Industries to get an exposure in the field of FPGA based system design. This summer course has given exposure in Verilog HDL Language, EDA tools and implementation on FPGA device with hands on practical sessions to participants.

Invited lectures of this course were delivered by Prof. Aurobinda Routray , IIT Kharagpur; Mr. Sohan Kumar , Intel India Bangalore; Dr. Kailash Chandra Ray, Dr. Arijit Mondal, Dr. Yatendra Kumar Singh and Dr. Preetam Kumar from IIT Patna and Dr. Kailash Chandra Ray, Principal Coordinator of this course along with research scholars and technical staff of VLSI & Embedded System Lab, Department of Electrical Engineering conducted Laboratory Sessions. Participants from various IITs, NITs, other state colleges and industry had attended this short term course. At the end of this course, valedictory function was organized in presence of Dr. Navin Kumar Nischal and Dr. Ahmad Ali of IIT Patna as guests.



Participants of STC on VLSI & Embedded System Lab

Workshop on “Effective Pedagogy for Waste Management”

A workshop on “Effective Pedagogy for Waste Management” was organised on 18th April, 2015 by Dr. Aditya Raj and Dr. Papiya Raj. This workshop was part of an ongoing project on “Waste Management Training to Reduce Health Hazards of Solid Wastes in Patna” at Center for Energy and Environment. Padma Bhushan Dr. Bindeshwar Pathak, founder of Sulabh International Social Service Organisation, was the keynote speaker for the event. Eminent academicians and representatives from UNICEF, Digital Green, various schools of Patna shared their views during the workshop. Around 60 teachers from 15 schools in Patna participated in the workshop and were actively engaged in the interactive sessions. School teachers and educational stakeholders from different schools of Patna engaged in comprehending the effective pedagogical processes and practices useful for good behavioural patterns necessary in our everyday life for waste management.

FORTHCOMING EVENTS

Inauguration of IIT Patna (permanent campus) at Bihta on 25th July, 2015 by Hon’ble Prime Minister of India, **Shri Narendra Modi**.

Third Convocation of IIT Patna and 7th Foundation day will be celebrated on 6th August 2015.

Department of Electrical Engineering is organising the prestigious National Conference on Computer Vision, Pattern Recognition, Image Processing and Graphics (NCVPRIPG-2015) for first time in Bihar from 16th to 19th December 2015. This will be the 5th edition of the conference being organized by Indian unit of pattern recognition and artificial Intelligence (IUPRAI). For more information please visit <http://www.iitp.ac.in/ncvprpg/>

Department of Physics is organising a Department of Science & Technology, Govt. of India sponsored SERC School on Modern Optics and its Applications during Nov. 30 to Dec. 18, 2015. For more information please visit <http://www.iitp.ac.in/index.php/latest-news/1327-serc-school.html>

Publications

Department of Computer Science and Engineering

Saha S., Alok A. and Ekbal A., "Use of Semi-supervised Clustering and Feature Selection Techniques for Gene-Expression Data", IEEE Journal of Biomedical and Health Informatics, 2015.

Alok A., Saha S. and Ekbal A., "Multi-objective semi-supervised clustering for automatic pixel classification from remote sensing imagery", Soft Computing, Springer, 2015. DOI: 10.1007/S00500-015-1701-x

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Acharya S., Saha S., and Thadisina Y., "Multiobjective Simulated Annealing based Clustering of Tissue Samples for Cancer Diagnosis", IEEE Journal of Biomedical and Health Informatics (J-BHI), 2015. DOI : 10.1109-JBHI.2404971

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Jana Angshuman, Halder Raju and Cortesi Agostino, "Verification of Hibernate Query Language by Abstract Interpretation", in Proc. of the 5th International Conference on Intelligence Science and Big Data Engineering (ISIDE '15), Suzhou, China, Springer LNCS, Jun, 14-16, 2015

Halder Raju, "Language-based Security Analysis of Database Applications", in Proc. of the IEEE 3rd International Conference on Computer, Communication, Control and Information Technology (C3IT '15), Hoogly, West Bengal, IEEE Press, Feb. 7-8, 2015

Jana Angshuman, Halder Raju and Cortesi Agostino, "Abstract Interpretation of Hibernate Query Language", appeared in Student Poster Session and Student Research Competition in 42nd ACM SIGPLAN-SIGACT Symposium on Principles of Programming Languages

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Department of Electrical Engineering

Dey Suman Kr. and Adhya Aneek, "IP-Over-WDM Network Design Methodology to Improve Efficiency in Overall Expenditure Due to Cost and Energy Consumption", IEEE/OSA Journal of Optical Communications and Networking, Volume 7, Issue 6, 563-577, Jun. 2015.

Singh A. K., and Parida S. K., "Allocation of distributed generation using proposed DMSP approach based on utility and customers aspects under deregulated environment", International Journal of Electrical Power and Energy Systems, Elsevier, Vol. 68 159-169, Jun. 2015.

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Kolekar Maheshkumar H and Sengupta S, "Bayesian Network-Based Customized Highlight Generation for Broadcast Soccer Videos", IEEE TRANSACTIONS ON BROADCASTING, Vol. 61, No. 2, 195-209, 2015

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Department of Mechanical Engineering

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Prajapati Y. K., Pathak M. and Khan M. K., "Clogging Behaviour of Elongated Bubble in Uniform and Diverging Microchannel", Proceedings of IMechE, Part C Journal of Mechanical Engineering Science, DOI:10.1177/0954406215585365, 2015

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Department of Civil and Environmental Engineering

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Department of Material Science and Engineering

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Department of Chemistry

Molla Aniruddha, Sahu Meenakshi and Hussain Sahid, "Under Dark and Visible Light: Fast Degradation of Methylene Blue in Presence of Ag-In-Ni-S Nanocomposites", J. Mat Chem. A, DOI: 10.1039/C5TA02888D, 2015

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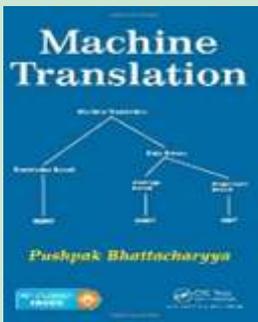
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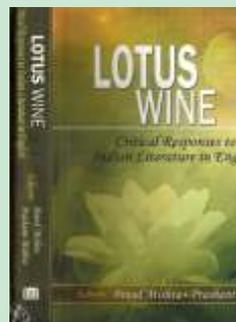
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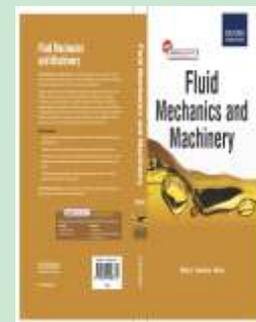
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Patent

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Awards/Fellowship and Honours

Dr. Debashis Chakraborty, Associate Professor, Department of Chemistry has been selected for his biographical profile to be included in the new "Who's Who in the World" 2016 (33rd Edition)"

Dr. Naveen K. Nishchal, Assistant Professor, Department of Physics, Research paper included in the 15 Highly Cited Articles in Applied Optics published in the journal over the last 2 years (June 24, 2015)
S. K. Rajput and N. K. Nishchal, "Known-plaintext attack-based optical cryptosystem using phase-truncated Fresnel transform," Applied Optics 52 (2013) 871-878.

Dr. Naveen K. Nishchal, Assistant Professor, Department of Physics, Dr. N. K. Nishchal was designated as Senior Member, OSA - The Optical Society (May 13, 2015)

Dr. Naveen K. Nishchal, Assistant Professor, Department of Physics, Research papers included in the 15 Highly Cited Articles in Applied Optics published in the journal over the last 2 years (March 26, 2015). <http://emessaging.vertexcommunication.com/p/v6auMrc6NS>
S. K. Rajput and N. K. Nishchal, "Image encryption based on interference that uses fractional Fourier domain asymmetric keys," Applied Optics 51 (2012) 1446-1452.

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Dr. Binod Mishra, Associate Professor, Deptt. of HSS was invited as Subject Expert in BOS, Vinoba Bhave University, Hazaribagh for revision of UG & PG Courses of English, 25 March, 2015

Dr. Nalin Bharti, Assistant Professor, Department of Humanities and Social Sciences chaired the Session jointly with Hans Bernd Schaefer, Professor, Bucerius Law School in Hamburg, Germany in an International Conference on Law and Economics on Law and Economics, 14-15 March, 2015 which was jointly organized by Gujarat National Law University, Indian Institute of Management Ahmedabad and Indian Institute of Technology Kanpur.

Dr. Nalin Bharti, Assistant Professor, Department of Humanities and Social Sciences has offered a certificate course on Infrastructure Economics through NPTEL.

Dr. Om Prakash, Assistant Professor, Department of Mathematics, Member of the Advisory Committee of the CATDMP (An International Meet)- 2015 at SRM University, Delhi held during January 23-25, 2015

Dr. Preetam Kumar chaired the session entitled "Underwater Vehicles-2 (UWV2)" in the IEEE International Underwater Technology Symposium (UT-15), Chennai, India during 22-24 February 2015

Dr. Mohd. Kaleem Khan, Assistant Professor, Department of Mechanical Engineering served as an expert member for setting up Mechanical Engineering Laboratories at the new campus of Aliah University Kolkata during Apr. 1-4, 2015.

Dr. R. K. Behera, Assistant Professor, Department of Electrical Engineering has been selected as Senior Member in IEEE.

Dr. Sudhan Majhi, Assistant Professor, Joint faculty of Mathematics & Electrical Engineering has been elevated to the grade of IEEE Senior member

Dr. Sriparna Saha, Assistant Professor, Department of Computer Science and Engineering has been granted the Junior Humboldt Research Fellowship.

Dr. Priyanka Tripathi, Assistant Professor, Department of Humanities and Social Sciences chaired a session in WEI Education and Humanities Academic Conference at Harvard University, Boston, USA, Jun. 8-10, 2015

Mr. Priyanshu Verma has won 2nd Prize in a Paper Presentation Event jointly organized by PCRA (Petroleum Conservation Research Association) and BPCL (Bharat Petroleum Corporation Limited) on 5th February, 2015 at IIT Patna. TITLE- Hybrid CO₂- Microbial Enhanced Oil Recovery and Utilization of Abandoned Oil Field for Surplus Biogas Production - A Novel Proposal

Ms. Sudipta Acharya, Research Scholar, Department of Computer Science and Engineering has been selected for the TCS fellowship.

Ms. Sharmistha Chatterjee, M. Tech. (Nanoscience & Technology) student, has obtained a merit prize for the oral presentation at the International Conference on Optics and Photonics held at University of Calcutta, organised by Optical Society of India.

Mr. Abhishek Saini, M.Tech (Mechatronics Engineering, Department of Mechanical Engineering) has won 1st Prize in a Paper Presentation Event jointly organized by PCRA (Petroleum Conservation Research Association) and BPCL (Bharat Petroleum Corporation Limited) on 5th February, 2015 at IIT Patna. Title of paper - "Energy Conservation - approach towards Automobile"

Membership

Dr. Sujoy Kumar Samanta, Assistant Professor, Department of Chemical and Biochemical Engineering, Member - Professional Body - AIChE- 009900878589

Dr. Sujoy Kumar Samanta, Assistant Professor, Department of Chemical and Biochemical Engineering, Member - Professional Body - International Association of Engineers: Member Number: 153320

Dr. Subrata Hait, Assistant Professor, Department of Civil and Environmental Engineering was selected as Member, American Society of Civil Engineers (ASCE) (Membership Number: 434779)

Foreign Internship by Students

Sr No.	Name	Department	Internship Confirmed at
1.	ASHUTOSH AGARWAL	CSE	GOOGLE, NEW YORK
2.	AYUSH KUMAR	CSE	DAAD, GERMANY
3.	SHASHANK SINGH	CSE	TRINITY COLLEGE DUBLIN
4.	OJAS MANGALVEDHEKAR	CSE	TRINITY COLLEGE DUBLIN
5.	V MANISH KUMAR	CSE	IHPC SINGAPORE
6.	KUNAL SHUBHAM	CSE	IHPC SINGAPORE
7.	DONTHIRI SASHIDHAR	CSE	IHPC SINGAPORE
8.	SARNADUTI BRAHMA	EE	ASTAR, SINGAPORE
9.	SUBHADEEP DATTA	EE	DAAD, GERMANY
10.	ARUN KUMAR SINGH	EE	NTU Singapore
11.	MADHAV KUMAR SINGH	EE	RENNES France
12.	SHIVENDU S SHRIVASTAVA	ME	UNIVERSITY OF MANITOBA, CANADA
13.	VITTHAL PANDEY	ME	FINISAR, MALAYSIA
14.	RISHAB GUPTA	ME	NATIONAL TSING HUA UNIVERSITY , TAIWAN
15.	KULKARNI PRANAV MANGESH	ME	SIMON FRASER UNIVERSITY, CANADA
16.	KUNTAL DAS	CSE	ARIZONA STATE UNIVERSITY, USA.
17.	RAVI SONAM	CSE	ARIZONA STATE UNIVERSITY, USA.
18.	PRACHETA SAHOO	MATHEMATICS & COMPUTING	LEIBNIZ UNIVERSITÄT HANNOVER (DAAD), GERMANY
19.	AMIT KUMAR	MATHEMATICS & COMPUTING	TU (DAAD), DARMSTADT, GERMANY
20.	NITHIN BABU	EE	TU (DAAD), DRESDEN, GERMANY
21.	AVIK RANJAN ADHIKARY	MATHEMATICS	NTU, SINGAPORE

Training and Placement

The Training and Placement Cell functioning in the IIT Patna is entrusted with the responsibility of guiding students for placement in credible organization and arranging summer internship in reputed multinational companies and institutions of repute in India and abroad. This cell also organizes seminars, group discussions, and mock interviews as a part of career guidance and personality development. The Cell has modern infrastructure facilities for receiving various companies in the campus. The cell is organizing placement events for the final year B.Tech, M.Tech and Ph.D. students and summer internship for all the pre final year students. Many companies and research organizations of repute visited our campus for placement during the academic year 2014-2015. It is recorded overall placement of 83% for B. Tech and 43% for M. Tech with highest salary package of INR 25 LPA offered by Amazon and average salary package of INR 9.12 LPA and INR 7.00 LPA for B. Tech and M. Tech students respectively. Few of major recruiters for IIT Patna during 2014-15 placement session are Amazon, DRDO, Tata Motors, Deloitte, TCS Innovation Lab, Snapdeal, Arista Networks, Rockon Technologies, Aurus Networks, Sigmoid Analytics, Yodlee Infotech, Mahindra & Mahindra, Tricon Infotech, ITC Infotech, Browser Stack, L&T ECC, Hero MotoCorp, Flipkart, Capgemini, Bridge2i, Lucid India, TCS(EIS & IT) and TCS DESS, etc.

Events held at IIT Patna

Anwasha 2015

IIT Patna is incomplete without Anwasha, the Techno-Cultural Festival of IIT Patna. The 6th edition of Anwasha took place from 29th Jan to 1st of Feb 2015 and saw a huge crowd and participation from colleges all over India. These 4 days echoed the theme of the festival "Hakuna Matata" meaning "No Worries". The first night witnessed the opening ceremony and a performance by the Sufi fusion band of Coke Studio – Swarathma. The pronites of Day 1 featured the much awaited Femina Miss India Campus Princess and Verve – The Fashion Show, judged by Miss India Earth 2013 Miss Shobita Dhulipala. Day 2 began with a lot of excitement and aggressive competition as teams clashed in quizzes and on spot events. But this was all bland in the extravaganza that was awaiting the crowd at night. Syngphony and Heelturn, the singing and dancing competition left not only the participants but also the crowd panting for more as the performances saw a complete spectrum of The Modern Indian Culture from Kathak to Salsa, from Ali Azmat to Taylor Swift. "All the world your stage and all me mere players" was proved by intense competition seen in Theatrix and Maidan-e-Jung (The Street Play Competition). Yet the first three nights although lavish in themselves were just a buildup for what was yet to come. Day 4 and the rock band performance. The stage was set and the crowd ready to hit the right note as Lagori took our breath away bringing to close the 4 day festival etched in our hearts forever.



Highlights of Anwasha'15 (29th January 2015 – 1st February 2015)

International Yoga Day Celebrations-2015 under banner of NSS, IIT Patna

IIT Patna celebrated International Yoga Day under the banner of National Service Scheme (NSS) on June 21, 2015. The programme started at 7:00 am in the Students Gymkhana where the faculty members, staffs and students of the institute under the guidance of Dr. Atul Thakur, practised Yoga. In this programme more than 150 student volunteers of NSS, faculty and staff participated. From 8:15 am to 9:00 am, a brief discussion on the topic Yoga for Harmony and Peace was organised by Dr. Jyotsna Agarwal with other yoga experts. Also a short movie of one hour on the History of Yoga was displayed to encourage the people towards Yoga and its benefits.

Dr. Sahid Hussain presented the memento to the Yoga experts who had helped in organising such programme successfully in the campus. Three and a half hours programme ended with thanks to dignitaries (Yoga experts) as well as all to participants.



Dr. Jyotsna Agarwal addressing the audience



Dr. Atul Thakur addressing the audience



Participants in the Yoga session

Rural Technology Development Club

HANDLE OPERATED SOIL AND GARBAGE COLLECTOR:

Project targets to help workers involved in garbage collection, soil collection and working at construction site. It's a handle operated model in which as user operates the handle and garbage, soil, etc gets collected in box attached with the model. This machine is functioning and was completed under the guidance of Professor Mayank Tiwari sir. Dr. Bindeshwar Pathak (Founder, Sulabh International) during his visit to IIT Patna, who not just appreciated the model but also volunteered to fund Rs 2 lakhs for taking the project further.

WHEAT CROP CUTTING QUADRICYCLE BASED MODEL:

This machine is in its pilot stage. It is a Human Powered Wheat Reaper to assist the farmer at crucial stage of reaping.

AUTOMATIC IRRIGATION SYSTEM:

This is being developed by Electrical Engineering students of the club, the aim is to design a system by which a farmer can just send SMS to regulate the water supply. It reduces the efforts as well as helps to control the adequate water supply in the farms. Microcontroller (mini), soil moisture sensor, 433Mhz RF transmitter and receiver are placed in farms to regulate this water supply. There are 5 stages in this project of which 3 have been completed successfully.

During this summer vacations students of the club visited 4 places in the 300 kilometer radius of Patna.

- Muzaffarpur (5th May 2015) : Lycee processing unit was visited in Muzaffarpur which enhanced our knowledge. The lac Bangles production unit near that place was visited and students are working to solve their problem of Low productivity by mechanizing processes involved in the bangle production under the guidance of Professor Somnath Roy sir.
- Raxaul, East Champaran (14th May 2015) : Students accompanied Professors who were visiting this place to conduct a workshop. There was a Rice Mill Sheller plant that manufactures Rice mill sheller machine. The students are working under the guidance of Dr. Somnath Sarangi to draw for them the Engineering Drawing of the machine they are manufacturing so that they can sell that machine even to places they cannot take it physically.
- Nawada (20th May 2015): The visit was in association with Ministry of Micro, Small and Medium Enterprises, India (MSME). The main occupation of the rural Nawada population is selling products of Bamboo like 'Tokrís & Channis' and the average production per person is 3-4 pieces which earns them about INR 150/ per day. The Rural Technology Development Club, IIT Patna has started working to develop better designed tools to increase the production and to improve the quality of the products.
- Patna Museum, Patna (20th June 2015): Khaaja, a sweet dish is prepared in a huge amount in this place. The workers even work day and night as the demand in some season is too high. This project proposal to mechanize the process was accepted by Professor Mayank Tiwari sir and students are working on it.

Computer Science Engineering student of the club (Kuntal Das and Ravi Sonam) have been selected as an intern by Dr. Uttaran Dutta, Prof. Arizona State University, USA for a pilot study will be conducted in rural West Bengal in this summer (June-July 2015), which is an integral step towards initiating a larger research project on ICT4D (Information and Communication Technologies for Development).

Unnat Bharat Abhiyan Cell, IIT Patna

Unnat Bharat Abhiyan (UBA) Cell of IIT Patna has a core committee led by the honorable Director with members from Sponsored Research and Industrial Relations Unit (SRIRU), National Service Scheme (NSS), Micro Small and Medium Enterprise (MSME) project, as well as the administration. A small seed grant has been approved for initiating the activities of the cell. Two research assistants (Mr. Sharique Khan and Mr. Ashutosh Kumar) have been appointed for a limited term under this project. The students from Rural Technology Development Club (RTDC) and Entrepreneurship Club of IIT Patna are also associated with UBA cell. BTech student, Mr. Anant Arya, is our student representative. We have been trying to reach out to different communities of practice in the cluster of villages around our campus in Bihta. Participant observation and surveys have been undertaken but our pivotal concern has been for trust and confidence building with all stakeholders in the villages. Our students also have been having good learning experiences in trying to understand the technological need of our village communities.

Bridging Technological divide and Empowering Rural India

Sitalpur is a remote village, in Motihari district, 150 km away from Patna. This village produces Rice mill machinery and sells all over eastern India.

There are about 15-17 units in the cluster of Sitalpur. Dr. Somnath Sarangi and Dr. Somanth Roy along with Mr. Ramachandra Prajapati conducted workshop on CAD–CAM at Sitalpur on 28.06.2014.

After successful completion of workshop on CAD CAM IIT Patna conducted hands on training from 13-15 July 2015 at IIT Patna campus. During this time they were introduced to latest technological advancement in manufacturing methods. They were given a brief introduction about CNC machines.

Food lodging and everything else of 24 participants from 17 clusters was taken care by IIT Patna. The whole programme was sponsored by UDYOG MITRA, Govt. Of Bihar.

The complete program was heartily supported by Mr. Pramod Prakash Dubey, Mr. Ravikant kumar, Mr. Sanjiv Maity and research scholars Mr. Dhananjay and Mr. Chandan kumar.



Participants receiving training on CAD –CAM



Participants receiving training on CNC machines



Workshop at Sitalpur held on 28.06.2014

Literary Corner

It's a Woman!

Far & far away,
In the heaven one day
The stars were blinking.
But in the head of the god there *were* Wonders and Imaginations clinking.
The whole world,
The whole universe
was shrinking
to be in his mind and a part of his thinking.

It was his own creation,
The sweetest one in the nature.
Which made him wonder,
How he made this creature.

This creation of love
This creation of devotion.
Without which,
There is no life
There is no motion.

Which makes a house, a home
is its sweet presence.
Without it the life
would be just an existence.

It does the work which nobody can.
Yes, Its a girl, Its a woman.

Harshit Agrawal
1401ME16
Department of Mechanical Engineering

A NEW DISCOVERY

Nilotpal Chakraborty
PhD Scholar, 1421CS10

Center of Excellence on Advanced Systems Engineering

"Let's go on a trip", Sumit said that in the middle of a discussion that I was having with him regarding a problem which is known to be NP-Complete. It sounded to be a good idea to me as I recently finished my year long battle with course works and genuinely needed a break. But we had no idea where to go. We've been to almost all the famous places in Bihar like Nalanda, Rajgir, Pawapuri, Gaya, Vaishali etc. All of these are tourist attraction spots and are mostly known for their mythological histories. With this sort of dilemma, Sumit got up to go to the washroom. Just when he opened the door, he said, "Please search for 'Barabar-ki-Gufayen', I'm coming in few minutes". I googled it and to my greatest surprise, I found some fascinating information about the place. I did my complete research based on the available amount of information I found on the web and made up my mind. "Pack your bags, we're going to Barabar caves", these were my words as soon as Sumit returned. And he next morning, we're on the cab to Barabar caves.

Barabar caves are situated on Barabar hills, at about 25kms from the north of Gaya, Bihar. These are the oldest surviving rock cut caves in India believed to be constructed during the regime of Great Emperor Ashoka for the Ajivika sages of the then era. We reach the place at around 10:30AM and hire a local guide there to take us to the caves. The caves are built up above the hills. While walking on our way there, the guide talked about the historical significance of the place and we also gathered some information about the localities. The exquisite beauty of Barabar Hills amazed us and literally these hills are carved out of huge granite rocks which are just incredible. There are exactly four caves up in the hill. They were dark and deep. On the hills, there are beautiful cave temples that give the place a holistic environment. There is also a giant lake in the hills, called 'Anand Vihar Sarobar' which is an ideal location for boating, fishing etc. It is believed that a river, which the local people call 'Patal Ganga', flows beneath the hills. The place was a beauty of its kind, but what surprised me the most is the emptiness there. I have been to many places around the state of Bihar and never observed such less number of visitors in any of them. I was in dilemma while I googled it planning for the trip as one would not find much information about it and now I understand why. This place, despite its incredible beauty and historical and religious significance, could not find its place in the list of the top sites for tourists.

Bihar is a state full of resources. It is well known for its cultural heritage, natural resources and large scale human resources. What it lacks is the proper cultivation of the same to make an impact on the global market. Among the various uncultivated sections, one such section is tourism. Though the current state government is taking various initiatives to promote it, exploration of beautiful, but underestimated and un-highlighted places are necessary for the progress of the state.

A NEW JOURNEY

Roshni Chakraborty
Ph.D. Scholar
Computer Science & Engineering

As I made my way to my new life of research in Patna from my City of Joy, the shrills of a winter morning welcomed me with open arms. I grew sceptical of the uncertainty of my new life as the heavy fog concealed my vision, but the excitement for the next stone in my journey of life was beyond bounds. The elite institute, undoubtedly, unleashed me to my dreams of research, but the city pained me. The tremendous traffic congestion and mismanagement, the attitude of locals to cleanliness made me often, irritated. We, humans, are born to adapt, but adaptation is not born of love or attachment, always.

In the next few months, I not only learnt to love this city, but grew protective and possessive of it, as well. This was not born from adaptation, but rather adaptation grew from this affection. I wonder if it were those cups of strong coffee or heart felt conversations with my best friend that lit the evenings of solitude in a new city. Research is a gruesome journey, where results are awaited despite the efforts. The people, here, have eased my journey to an extent. The irregular but surprise visits to new places, exploration of new restaurants, adjoined me, unknowingly to new acquaintances, who soon became friends to friends forever. The days continued with dose of new analysis from IEEE. The days flew in moments, those chilly nights and foggy mornings led to scorching days .

You have heard about free spirits, who can roam despite the conditions or the weather. Well, I met a bunch of scientists (soon-to-be), who decided to trip to Nalanda, the adverse climate hardly affected their determination. The result? Well, it was a day of memories and clicks, an evening of events while we waited at the highway for hours, the reason being deadlock. That wait was a blessing in disguise, as strangers shared moments, and hours faded in seconds. My journey in this institute though might seem a travelogue as we even drove to the City of Ganges, Varanasi to enjoy the arti., after a few months. That boat ride at night, with nostalgic songs, the brush of waves, those stories of Ghats by boatman, somehow , enriched us to new experiences, which words can't express. Life never promised to be a fairy land, but these few months gave numerous experiences to ponder, and a life to live.

Happiness is a state of mind, make it permanent. It, though, depends on many factors. That feel of first stipend, the joy of financial independence to those moments of enlightenment and encouragement from fellow geeks to professors are few of the utmost factors. My journey at this institute has just begun, but this ride has been the perfect amalgamation of surprises, adventure and education, it had moments of depression but days of sheer amazement. The world is not a wish granting factory, but when we resolve towards perfection, we surely would attain excellence.

The New Destination



Administrative Building



Academic Block No- 03 Dept. of Mechanical
Electrical Engineering



Academic Block No- 04 Science Block
(Physics , Chemistry & Math)



Academic Block No- 04, Main Gate



Academic Block No- 06 Dept. of Civil & Environmental ,
Material Science, Chemical & Biochemical, H.S.S.



Academic Block No- 09, Tutorial Block



Work Shop -A, B,C



Director's Bungalow



Hospital



Sewage Treatment Plant



Road with street light post at roundabout portion
in front of Administrative Building



Water Treatment Plant



Staff Quarter Type B



Boys Hostel



Staff Quarter Type D

Editors: Dr. Binod Mishra (Associate Professor & Co-ordinator) and Dr. Priyanka Tripathi (Assistant Professor), School of Humanities and Social Sciences.

Technical Support: Mr. Ahmad Nishat (J.A., School of Basic Sciences & HSS)

Information for Impulse can be sent throughout the semester to the editorial team on impulse@iitp.ac.in

ACADEMIC CALENDAR FOR AUTUMN SEMESTER 2015-16

EVENT	DATE	DAY
Registration for <i>M.Tech./PhD 2015 Batch</i>	July 30, 2015	Thursday
Welcome and Orientation for <i>All New B.Tech./M.Tech./PhD</i> :	August 2, 2015	Sunday
Registration for B.Tech. 2015 Batch (For candidates to be admitted through JEE (Adv.):	August 2, 2015	Sunday
First day of Instruction for B.Tech. and M.Tech. and Ph. D programmes	August 3, 2015	Monday
Last date for late registration with fine	August 6, 2015	Thursday
Last date for course adjustment for B.Tech. and M.Tech. programmes	August 6, 2015	Thursday
Communicating the list of short attendance cases to respective Faculty Advisors/Supervisors	Sep 07- 11, 2015	Monday to Friday
Mid Semester Examination (MSE)	Sep 14 – 19, 2015	Monday to Saturday
Last date for showing mid-semester answer copies to students	Sep 24 – 19, 2015	Thursday
Mid Semester Review of UG projects (without affecting the regular classes)	Between Sep 21, 2015 and Sep 26, 2015	
Last date for Review of Mid semester performance of all students by Department UG & PG Program Committee and report of academically weak students to their Faculty Advisors/Supervisors	Sep 29, 2015	Tuesday
Last date for sending list of courses to be offered in next semester	Oct 26, 2015	Monday
Last date for General Time Table slot allocation for next semester	Nov 13, 2015	Friday
Course Evaluation Week Course Pre-Registration Week Communicating the final list of short attendance cases to Academic Section through their Faculty Advisors/Supervisors	Between Nov 09, 2015 and Nov 13, 2015	
Display of list of detained students in End Semester Examination due to short attendance by the Academic Section	Nov16, 2015	Monday
Last day of Instructions	Nov 16, 2015	Monday
End Semester Examination (ESE)	Nov 19 – 26, 2015	Thursday to Thursday
Last date for submission of Grades	Dec 03, 2015	Thursday
Last date for Department UG & PG Program Committee meeting for considering results of all students. Last date for submitting hard copies to the Institute UG & PG Program Coordinator	Dec 04, 2015	Friday
Last date for Make-up-Examinations for students having "I" and "X" grades and submission of letter grades to the Institute UG & PG Program Coordinators	Dec 06, 2015	Sunday
IAPC meeting	Dec 07, 2015	Monday
Declaration of Results	Dec 08, 2015	Tuesday
Submission of fee for Spring Semester 2014-15	Between Dec 09, 2015 and the day of Registration for coming Spring Semester 2015-16	
Winter Break begins (Only for UG students)	Nov 30, 2015	Monday
Conduct of written Test/interview by Departments for PhD admissions	Dec 09-12, 2015	Wednesday to Saturday
Winter Vacation (Only for Teachers)*	Dec 09- 27, 2015	Wednesday to Sunday
*Teachers can avail their vacation leave according to the Institute rules.	Dec 09- 27, 2015	Wednesday to Sunday
Registration for all existing UG & PG students and Registration for all new PG entrants for Spring Semester 2014-15	Dec 28, 2015	Monday
First day of Instruction for Spring Semester 2014-15	Dec 29, 2015	Tuesday