Newspaper Clips
May 6-12, 2017

May 12

In a first, IIT Madras offers M Tech degree through remote learning

http://timesofindia.indiatimes.com/home/education/in-a-first-iit-madras-offers-m-tech-degree-through-remote-learning/articleshow/58635722.cms

You can now get an M Tech degree from Indian Institute of Technology (Madras) without being physically present on the campus and at your own pace.

In a first of its kind initiative, IIT Madras has taken its teaching process out of the confines of the campus. It has recruited 31 M Tech students who will not have anything to do within the physical boundaries of the campus but will complete their course from their workplace. The first programme is for the automobile sector and the institute is planning to expand it to communication, information security and aerospace.

User-oriented impact programmes, tailor-made for corporate employees, are in practice for some time now. Corporates sponsor fresh graduates as well as employees.

However, till now they are required spend a year in the campus. "The programme we are launching is M Tech in automotive technology for the industry employees who wish to upgrade their qualification and skills. A part of the curriculum is common to what we teach at IIT, Madras, and a part if it will be tailored to their specific needs," said IIT-M Director Bhaskar Ramamurthy.

In this model, a coordinator and classroom would be set up at the industry location and teaching will be imparted by IIT-M faculty in the evenings. This doesn't require employees to take leave or travel to other locations. "The students will not require to have any physical presence on the campus till the completion of the course. The delivery mode is live online where the students after their work hours will attend classes to be delivered by our faculty," said Ramamurthy.

J&K Government plans to open up new IIM in Central Kashmir

http://www.jagranjosh.com/articles/jk-government-plans-to-open-up-new-iim-in-central-kashmir-1494561670-1

As per the recent news, J&K Government proposed to set up the campus of Indian Institute of Management (IIM) at Narkura in Central Kashmir's Budgam district. In this direction the State authorities have identified 800 kanals of state land at Narkura Budgam for establishing the institution in Kashmir.

Officials also mentioned that "We zeroed in on the site because Government of India had told the State Government that land for the campus should be within 30 kilometers from the nearest airport. The site is also in vicinity of Srinagar."

While confirming this news, Minister for Education, Jammu and Kashmir, Syed Altaf Bukhari said they have identifed land at Narkura Budgam for establishing the campus. He added that "We have offered this site (for setting up the campus). The Union Ministry of Human Resources would take a final call on the matter after inspecting the site."

He also told that the Centre would shortly send a team to the shortlisted location to conduct a site-survey of the campus. In October last year, the Government of India had cleared setting up of an IIM in Jammu and an oI-site campus in Kashmir.

Setting up of IIM in J&K is part of the Rs 80000 crore development package that was unveiled by the Prime Minister Narendra Modi in 2015 for infrastructure development of the State. Under the package, Rs 1000 crore central assistance has been kept for establishment of IIM Jammu with outcampus in Kashmir. Officials have also disclosed that the idea of establishing campus of IIM in Kashmir was exchanged with the GOI before finalization of the package in 2015.

In 2015-16 Union budget, Finance Minister Arun Jaitley announced setting up of an All India Institute of Medical Sciences (AIIMS) and IIM in the State. While Jammu walked away with IIM, the government's decision to establish AIIMS in Kashmir triggered protests in Jammu. This prompted the GOI to sanction another AIIMS for Jammu.

When the Government gave a nod to set up AIIMS in Jammu, it led to the demand for setting up of IIM, Indian Institute of Technology (IIT) and Indian Institute of Mass Communication (IIMC) in Kashmir as well.

May 11

IITs to offer one-year MTech degrees?

http://www.thestatesman.com/books-education/iits-to-offer-one-year-mtech-degrees-1494493241.html

The Indian Institutes of Technology (IITs) may now be able to offer one-year executive MTech degrees, after the IIT Council, the highest decision-making body of the IITs, cleared a proposal for the same, suggest reports. The one-year programme will be tailor-made for professionals, who otherwise do not have time to pursue a two-year full-time course.

The fee for the executive MTech programme is, however, expected to be more than the current two-year programme, which costs a little over Rs. 60,000. The IIT Council has proposed a fee structure equivalent to the 'market rate', i.e on a par with fee being charged by private institutes.

The one-year MTech programme is being designed along the lines of the executive MBA programmes offered by some of the Indian Institutes of Management. Many IITs are facing a problem as students are increasingly leaving their MTech programmes midway after finding jobs.

School of Design soon to be established in IIT Delhi for creative buds

http://economictimes.indiatimes.com/industry/services/education/iit-delhi-to-soon-set-up-school-of-design-for-creative-buds/articleshow/58612987.cms

The Indian Institute of Technology (IIT) will soon be setting up a School of Design for the ones high on creative quotient. The proposal has already been approved by the IIT Senate.

The Indian Institute of Technology (IIT) will soon be setting up a School of Design for the ones high on creative quotient. The proposal has already been approved by the IIT Senate and is likely to be placed before the Board of Governors later this month. Courses offered at the proposed School of Design included Bachelor of Design (BDes), a four-year-long course, and Master of Design (MDes) of two-year duration.

At the moment, the institute offers Master of Design but only has four faculty members for the course with a limited intake.

V Ramgopal Rao, IIT Delhi Director, told *PTI*, "Be it machines or gadgets, what is inside is what engineers design. But for instance, a phone, how should the case be, how should it look like, where and how the buttons should be, this is not something a technocrat can work better upon and there is a need for someone who specialises in product design."

For the BDes there is a separate entrance test in the country and we will be a part of it. Of course, for creative designs you cannot test one on concepts of Physics, Chemistry and Maths but on the ability of creative thinking which is not an engineer's domain," he added.

"Once we have a full-fledged school of design, we will recruit more faculty for the Masters course and then start offering the Bachelor's degree," Rao said.

"For the practical aspects, design students will work with engineers and design products which we will patent and commercialise in the longer run as we do for the technical projects," he said.

What drought? Check out IIT Madras, it's an oasis

http://www.newindianexpress.com/cities/chennai/2017/may/11/what-drought-check-out-iit-madras-its-an-oasis-1603523--1.html

CHENNAI: Stories about water reserves having dried up, crippling lakhs of lives in different parts of the country, including Tamil Nadu, are common in the news these days. In contrast, the Indian Institute of Technology Madras (IIT-M), has an inspirational story to tell. Though the Chennai Metropolitan Water Supply and Sewerage Board (CMWSSB) has cut the supply by half, the premier institution is facing no crisis and, in fact, has excess water at its disposal that is being diverted to fill waterbodies on the lush-green campus. There are even plans to sell it!

IIT-M has desilted the freshwater lake, which has the capacity to store 180 million litres, taking inflow from storm water drains, so, not a drop of rainwater is wasted. In January, IIT-M commissioned a state-of-the-art 4 MLD (million litres per day) Sewage Treatment Plant (STP) using the latest Sequential Batch Reactor technology which treats raw sewage to drinking water standards. A fully-automatic Treated Water Distribution System has been laid with 20 km long pipelines connected to every household, hostel and academic block. This enables optimum utilisation of treated water.

The flushing, gardening and air conditioning, which accounts for 40% of total usage, is taken care of by treated water. IIT-M has a population of about 20,000, of which 9,000 are students (an equal number are residents) and a floating

populace of 2,000. The institute's one-day requirement is 2.8 MLD and the CMWSSB supplies 1.2-1.8 MLD. The gap is being bridged by tapping local freshwater resources and waste water recycling.
Speaking to Express, Ligy Philip, Chairman (Engineering Unit), IIT-M, says: "We have a freshwater treatment plant near the lake which can supply 0.8 MLD for drinking purposes.

The STP treats close to 30 lakh litres per day, including 8 lakh litres of waste water generated by the IIT-M research park. We send back 8 lakh litres of treated water to the research park for their utilisation and 10 lakh litres is routed for flushing and upkeep of greenery. So, the remaining 10-12 lakh litres is in excess, which is being diverted into ponds. Once those are full, two groundwater recharge wells are dug up, each having a capacity of 0.5 MLD. This will replenish the fresh water lake. Overall, nothing is wasted," she explains. Philip adds that IIT-M is looking for buyers for the excess treated water.

A visit to some of the facilities in the campus is enough to understand how successful its water distribution system is. Ponds are full, with fish and birds flocking the vicinity. The lawn area, cricket ground and newly inaugurated Manohar C Watsa Stadium bears no sign of drought.
D Rajavel, assistant executive engineer, IIT-M, says the infrastructure should hold strong for the next 50 years. "A decade back, the demand for water was 1 MLD, but now it has gone up to 2.8 MLD. It would be extremely difficult to maintain such a large campus otherwise," he says, before adding that the entire mechanism was realised in the last three years, in a phased manner, at a cost of about `20 crore.

Treated water quality

As per new Central Pollution Control Board (CPCB) norms, these are key parameters in accessing the quality of treated water. IIT-M's STP has fulfilled all key parameters and has extra UV filtration and ozonation to kill any pathogens or bacteria.

May 10

IIT Delhi: Arvind Subramanian to give free classes under SWAYAM scheme

http://www.business-standard.com/article/economy-policy/iit-delhi-arvind-subramanian-to-give-free-classes-under-swayam-scheme-117051000398_1.html

The 'Summer School for Economics Teachers' will be recorded for students to access

Chief Economic Advisor Arvind Subramanian will deliver a lecture series of 10 days at Indian Institute of Technology (IIT) Delhi on 'trends in the Indian economy' to economics teachers in the second week of June. 'The Summer School for Economics Teachers' by Subramanian will be recorded and made into free an online resource.

Among the participants, 100 faculty members from the economics department of various universities and colleges, including St Stephens, SRCC, Hindu, and Lady Shri Ram College, are likely to attend the lectures, The Hindustan Times quoted an HRD ministry official as saying.

They will be spread out over seven days. He will conduct a 40-hour course on the economy, focusing on major economic trends, possibly even the demonetisation issue, which will subsequently be hosted online on Swayam.

The 'Summer School for Economics Teachers' will be recorded for students to access under the government's SWAYAM platform. Study Webs of Active-Learning for Yung Aspiring Minds (SWAYAM) is HRD ministry's initiative of providing open online courses to students.

"It was felt that SWAYAM platform needs to be popularised and the lecture series by the chief economic adviser will help in achieving that," said a senior HRD official.

The HRD ministry, however, has extended invitations only to the faculty of select institutes on a first-come-first- serve basis. They will also offer accommodation for visiting scholars at IIT Delhi, says Economics Times.

What is SWAYAM?

SWAYAM is a programme initiated by the government to achieve - access, equity and quality.

The objective of this effort is to take the best teaching learning resources to all, including the most disadvantaged. SWAYAM seeks to bridge the digital divide for students who have hitherto remained untouched by the digital revolution and have not been able to join the mainstream of the knowledge economy.

This is done through an indigenous developed IT platform that facilitates hosting of all the courses, taught in classrooms from 9th class till post-graduation to be accessed by anyone, anywhere at any time. All the courses are interactive, prepared by the best teachers in the country and are available, free of cost to the residents in India. More than 1,000 specially chosen faculty and teachers from across the Country have participated in preparing these courses.

In order to ensure best quality content are produced and delivered, seven National Coordinators have been appointed: They are NPTEL for engineering, UGC for post-graduation education, CEC for under-graduate education, NCERT & NIOS for school education, IGNOU for out of the school students and IIMB for management studies.

Indian government to set up seven new research parks across India to boost innovation

http://www.thenewsminute.com/article/indian-government-set-seven-new-research-parks-across-india-boost-innovation-61795

The government is also setting up five new bio-clusters to give an impetus to biotechnology startups.

It's been over a year since Prime Minister Narendra Modi unveiled the Startup India, Stand Up India initiative in a bid to encourage innovation, entrepreneurship and investment into the startup ecosystem.

When the startup India initiative was launched, it was planned that seven new research parks would be set up with an initial investment of about $15.4 million each. The idea was to boost innovation through incubation and joint efforts between academia and the industry, as per a report by Inc42. The proposed parks will be set up at IIT Guwahati, IIT Hyderabad, IIT Kanpur, IIT Kharagpur, IISc Bangalore, IIT Gandhinagar, and IIT Delhi.

Inc42 reports that as per the most recent Startup India status report, of these seven, IIT Kharagpur is already under construction. The DST has sanctioned about Rs 90 crore to set up a research park at IIT Gandhinagar and has initially disbursed Rs 40 crore. The Ministry of Human Resource Development (MHRD) and DST are setting up the remaining research parks at IIT Guwahati, IIT Hyderabad, IIT Kanpur, IIT Delhi, and IISc Bangalore.

Startups in the biotechnology sector also are being given an impetus by the government. In this regard, the government will be setting up five new bio-clusters, 50 new bio-incubators, 150 technology transfer offices and 20 Bio-Connect offices will be set up in research institutes and universities across India.

A fund has also been set up to provide financial assistance to new biotech startups. The fund called the BIRAC AcE Fund has been set up in partnership with National and Global Equity Funds (Bharat Fund, India Aspiration Fund amongst others).

As per Inc42, the Startup India Status report dated April 15, 2017 says that three Bio-incubators have been selected for the Equity Fund. A total of 20 bio-incubators have been supported by the DBT.

May 9

India- IIT-B professor awarded prestigious INSA Young Scientist medal

http://menafn.com/1095463760/India--IIT-B-professor-awarded-prestigious-INSA-Young-Scientist-medal

Vikram Vishal, assistant professor in the Earth Sciences department at IIT-B, has won the coveted Indian National Science Academy (INSA) medal for Young Scientist, 2017.

It is considered one of the most prestigious recognitions of excellence in young scientists. There is no scope for self-application; winners are chosen through nomination.

He has been awarded a cash prize of Rs. 25,000 and a bronze medal.

a d g Download App Context: IIT-B professor wins INSA Young Scientist medal 09 May 2017: IIT-B professor awarded prestigious INSA Young Scientist medal

Vikram Vishal, assistant professor in the Earth Sciences department at IIT-B, has won the coveted Indian National Science Academy (INSA) medal for Young Scientist, 2017.

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Fact: A glance at Prof Vishal's qualifications

Prof. Vishal is the first graduate from the IIT-B Monash Research Academy, a joint venture between IIT-B and Australia's Monash University. Fellows get to earn a dual-badged PhD from both the institutions; they also get to spend time in both countries during their research period.

Latest Timelines Mumbai Maharashtra- Junk food in school canteens banned World President is missing: Bill Clinton co-authoring book with James Patterson #India SC seeks Centre's response on banning female genital mutilation World Child abuse website gets busted, reveals sordid state of humanity #India Gujarat Dy CM's 'heavily drunk' son barred from boarding flight #India UP petrol pump scam- Supplier of cheat-chips arrested World Sohail Mahmood to be new Pak envoy to #India Research: Vishal's research focused on climate change, global warming

Prof. Vishal wanted to focus on preventing climate change and global warming by controlling the amount of carbon dioxide in the atmosphere.

For the purpose, he conceptualized underground reservoirs to hold the carbon dioxide released from industries; instead of releasing it into the air, it would instead be diverted deep into the ground.

The mechanism is called 'Geologic Carbon sequestration'.

Fact: Does Vishal's model have scope of application in India?

Prof. Vishal says his model can be utilized in many regions of #India where there is significant industrial release - coal fields in southern and northeastern Maharashtra, Chhattisgarh, Jharkhand, MP and WB. The carbon dioxide can be injected for methane recovery, or simply stored.

Six new IITs coming soon; Canara Bank to mobilise Rs.20,000 crore via debt: Prakash Javadekar, HRD Minister

http://economictimes.indiatimes.com/opinion/interviews/six-new-iits-coming-soon-canara-bank-to-mobilise-rs-20000-crore-via-debt-prakash-javadekar-hrd-minister/articleshow/58590770.cms

In an exclusive interview with ET Now, Prakash Javadekar, HRD Minister shares his views on Warren Buffet's comments on IITs & lot's more. Edited excerpts:

ET Now: What he makes of Warren Buffet's comments lauding the capabilities of IITs?

Prakash Javadekar: Yes, when the world leaders in particularly all eminent people trust in IITs, IITs has earned its reputation. Bill Gates once famously also said when he was asked why you are recruiting so many Indian Engineers more than the required, so he said I am employing everybody because if I do not, they will start another Microsoft in Bengaluru so that is a credibility of our engineering.

The IITs are definitely a quality mark in engineering, in logic, in mathematical abilities, model engine everything and therefore they are in great demand. Now last week only we had IIT council meeting we have decided to strengthen IITs further by infusing more money into IITs through higher education finance agency to create world's best research infrastructure and research labs because that is why best of the best talented youngsters go in foreign universities.

We also decided to give Prime Minister scholarship 60000 to 75000 per month it is huge for those talented innovators and we will recruit IIT faculties by tapping all our best NRI talents and our Indian students studying abroad to bring them back. China did it successfully, we will also do it successfully so best of the faculties with best of the freedom, best of the research opportunity, best of the consultancy and other freedoms but still they will guide whole students and they will take their teaching assignment. So, there are various ways by which we are also increasing women's quota.

ET Now: In fact Warren Buffett spoke about the brain power of India which unfortunately we keep losing to the developed world as in the form of brain drain. If you are going to bring them back as visiting faculty or full time faculty you can perhaps also invest in more IITs?

Prakash Javadekar: Yes, we are investing more in IITs and best of the institutes and research.

ET Now: I mean new IITs.

Prakash Javadekar: Yes, we have already started six new IITs. We will complete their construction also very fast but they have already started their academic courses so faculty more research labs, more research infrastructure, more scholarships and best of the guides bringing from outside also. So, we will create an environment where Indian student best of the students will stay back here.

ET Now: You said this government will look at investing more financially in IITs. Can you share with us has any figure been reached?

Prakash Javadekar: The higher education finance agencies is a new initiative of Modi government wherein this was announced last year's budget wherein 2000 crore have promised from the budget and now we have decided upon the modalities now the Canara Bank is the agency and it will raise from debt instruments through debt instruments nearly 20000 crore. These Rs 20000 crore will be pushed into various research and other infra to plug in other infrastructure deficit in a higher learning centres of higher learning. It is expected that these funds will provide to the universities or the research institutes or the IITs, IIMs or anybody they will return it in due course with their internal accruals. So, that is also a new beginning.

ET Now: 20000 crore of how much that.

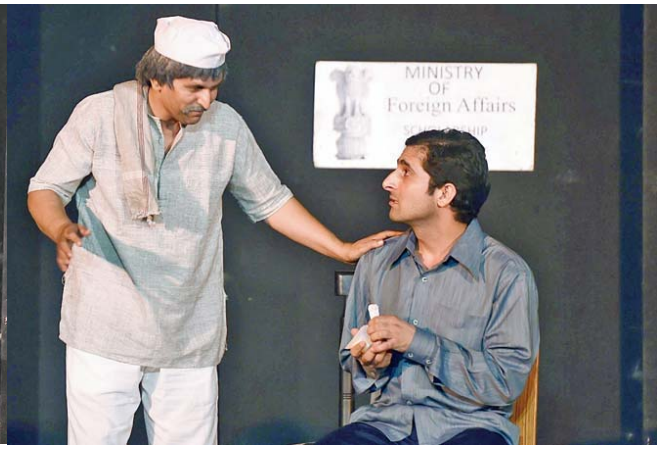
Prakash Javadekar: Within next two years we will mobilise them and within next three years we will push them into this so we have asked all higher learning education institutes to prepare plan what are the infrastructure deficiencies, priority will be given for the research infrastructure and those gaps where we will immediately fund from this higher education finance agency. The budgetary support as usual will continue.

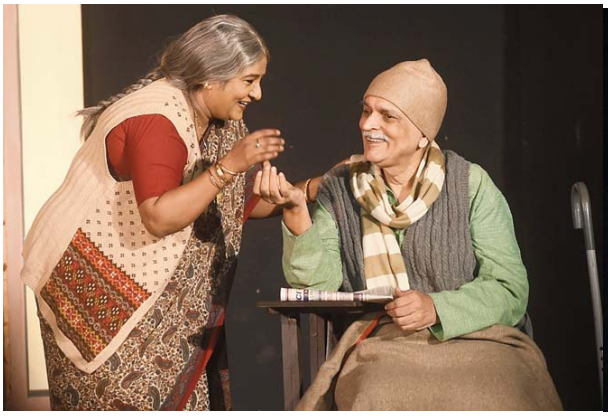
May 8

One play, four stories staged at IIT Delhi

http://timesofindia.indiatimes.com/entertainment/events/delhi/one-play-four-stories-staged-at-iit-delhi/articleshow/58562543.cms

How often do we get a chance to mend a relationship which is on the verge of a break-up or meet strangers who help us start a new life? These were the questions addressed in the play Footnotes of Life, Hashiye Zindagi Ke..., which was performed recently at the Alumni Annual General Meet of Indian Institute of Technology, Delhi. Written and directed by Nadira Zaheer Babbar, the play had four short stories based on the things we often neglect in our lives. The relatable stories received an overwhelming response from the audience. The cast of the play included Nadira's son, Aarya Babbar, Vibha Chibber and Utkarsh Mazumdar, among others.





Four stories about different kinds of relationships

The four short stories were presented and weaved together by a sutradhar, played by Ankur Parekh, who was a sales executive in the play. The first story, titled Friends, started with two boys giving an exam for a scholarship. It highlighted the disconnect between the two characters because of the difference in their economic status. The second story, Musafir, had two strangers - a middle-aged woman and an old man - describe the hardships of old age. A husband-wife relationship, where the wife earns more than the husband was the theme of the third story, Painkiller. Aarya Babbar played a jealous husband who cannot see the efforts put in by his wife to save their marriage. The last story, Peele Gulab, was about an old couple, where the man returns to his wife after being ditched by his lover. The story unfolds as the man reminisces about his lover, and is not ready to accept that she left him.

The audience's response was great: Nadira

After the play, Nadira told us, "This was the first time that we performed in IIT-D. It was really overwhelming. The response was great. When the play starts, you don't know whether the people would like it or not, but the response was great here."

Satish Chauhan, manager of the IIT Alumni Association, added, "All of us enjoyed the play thoroughly. These stories are around us, but we hardly pay any attention to them."

How to re-engineer the engineering curriculum to provide better employability

http://www.financialexpress.com/jobs/how-to-re-engineer-the-engineering-curriculum-to-provide-better-employability/658292/

The change in curriculum combined with compulsory internships and induction programmes for students should equip them with a healthy mix of personal growth and professional progress.

The decision taken by the All India Council for Technical Education (AICTE) to revise the curriculum for engineering colleges is, therefore, welcome and much-needed.

In April, the talent assessment company Aspiring Minds released the “National Programming Skills Report”. Among other things, the report noted that “only 4.77% candidates can write the correct logic for a program, a minimum requirement for any programming job.”In 2013, another Aspiring Minds study found that, in India, “only 7% of the engineering graduates have the skills to handle core engineering tasks.”

In 2011, a study by the software industry body Nasscom suggested that 25% of the engineering graduates in the country are employable. These are alarming statistics. These are not simply numbers, but also point towards a possible catastrophic impact.

The decision taken by the All India Council for Technical Education (AICTE) to revise the curriculum for engineering colleges is, therefore, welcome and much-needed. This should serve to ease the stress levels of students and improve the quality of education across the country.

In the past few years, we have seen that a majority of institutions in the country have, more often than not, been focusing on churning out more and more graduates every year. In this process, the general focus is on theoretical skills with minimum attention being paid to applicability or hands-on skills. The lower employability rate—as has been found out by multiple reports over the years—is attributed to the skills gap in students and one of the reasons of this is lack of practical exposure.

Going forward, with technological advancements including Internet of Things (IoT), artificial intelligence, virtual reality etc, engineering aspirants need to have specific skill-sets to respond to the evolving environment. It is also important to remember that these new technologies have very few or no structured courses. In addition, there are a handful of books that one could refer to in order to get more information on these new-age technologies. The only way to study these is through practical application.

The suggested curriculum should, therefore, focus more on skill development rather than just theory. This change in the curriculum, brought by the AICTE, should address these dire shortcomings instead of paying lip-service by cosmetic variations. For instance, the proposal of mandatory internship will go a long way in giving students clarity on how they

stand vis-a-vis industry requirements. Similarly, the introduction of an induction programme will help reinforce the fundamental concepts and the required language skills for technical education.

This combination will encourage students to pursue creative interests, reassess their goals and work towards a future where the two balance harmoniously. The curricula change combined with compulsory internships and induction programmes should equip students with a healthy mix of personal growth and professional progress. In addition, the curricula should include vocational training for students which will help bridge their skills gap.

Mandatory accreditation is required to make sure that the teaching methodology is focused on outcome and engineering graduates are able to compete at the global level. While the National Board of Accreditation (NBA) is doing a great job, the sheer number of courses to be accredited in India is mind-boggling. If 3,300 institutions were to get accreditation for just five of their core courses, we are talking about 16,500 accreditations across the country.

And with re-accreditations every few years, we are talking about numbers that are impossible to meet unless the NBA and the ministry of human resource development (MHRD) also invite global bodies like the IET to support them in their quest.

It should be mandatory for every teacher, in each of the technical education disciplines, to undergo an annual refresher course delivered through the government's SWAYAM portal, encapsulating all the major advances in the field of their study.

These initiatives will serve as a start to the mammoth exercise of curriculum and methodology change that the engineering education in this country sorely needs, and that all these measures will overhaul the outdated curricula of engineering and technical institutions. This is just the start and a lot more needs to be done. While the government has made its intentions clear about the change, the academic institutions and, more importantly, the industry needs to get together to support and advise all the stakeholders in this change. After all, the industry is the final consumer of the engineering talent that the universities produce.

Combating the bias: More seats at IITs can help fight gender imbalance

http://www.hindustantimes.com/education/combating-the-bias-more-seats-at-iits-can-help-fight-gender-imbalance/story-U2qr4DlaJWOcJMKRcbAFIP.html

IITs will admit more than 1,400 women from next year, in a move aimed at rectifying gender balance in the country's premier institutes.

Alarmed by the decline in women's number in IITs, the admission board of the institutes recently approved a hike in the number of seats for female students from 8% to 20% till 2019.

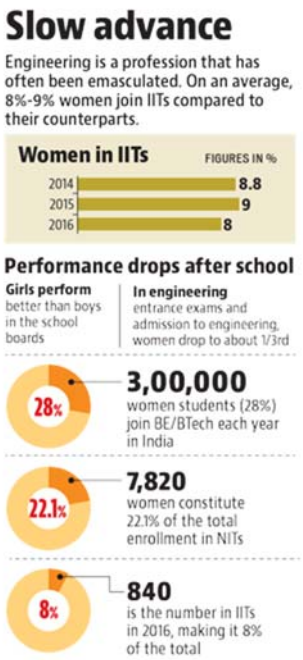
The 23 IITs in the country will create supernumerary seats for girls and have been asked to ensure adequate hostel facilities for them.

The move came after a panel constituted by the Joint Admission Board (JAB), ministry of HRD, filed a report painting a grim picture about the biases that women continue to face in India.

India is not the only country which is facing this problem. In the US, the number of women opting for STEM (science, technology, engineering and Math) in grad schools has halved over three decades and while women make up more than 51% of the workforce, they hold 26% of computing-related jobs, shows US Department of Labour data.

Despite proving their mettle in academics and other avenues, including administrative and medical exams, women are not a favoured lot when it comes to specialised and higher studies, especially engineering.

Engineering as a profession has been emasculated in the popular imagination. If it's an engineer, it has to be a man. Though more and more women are making their presence felt—they represent 28% of the country's 40 lakh engineering graduates—the IITs, a traditional male bastion, has been a tough nut to crack.



Of 10,500 undergraduate students who took admission to the 23 IITs in the country last year, only 840 (8%) were women, compared to a little over 1,000 (close to 10%) in 2015, shows data from the JAB that conducts the Joint Entrance Examination (Advanced).

No woman has made it to the top 100 ranks and Riya Singh of Kota, who secured an All India Rank of 133, topper among 4,570 qualified women candidates, is the closest any woman has come.

While JEE (Main) is relatively easy to clear, most aspirants feel the necessity for coaching for the Advanced exam. And it is here that the bias against women begins.

The panel constituted by the admission board notes this in its report. "Due to societal preferences and biases in India, by and large it is the sons who are sent for coaching rather than equally talented daughters."

Pramod Maheshwari, director of Career Point, a coaching institute in Kota, says very few women opt for the engineering compared to men. His institutes merely have 20% women.

"Holding traditional, paternalistic views, parents may believe that they are acting in the best interests of the girls, that they are protecting them from a hostile society, that they are preparing them for a suitable feminine role in life," the report says.

“There are overt and subtle biases in society against female students opting for engineering careers. These start with parents and close family who may hold traditional views on gender. Many parents still believe that engineering requires brute strength.

“In schools, many teachers have orthodox views on career options for boys and girls. Hence, they advise and steer girls towards ‘feminine’ career choices rather than the ‘masculine’ engineering. Likewise, textbooks often cast girls/women in ‘feminine’ roles,” it notes.

Parents concur with the findings of the report. “IITs are not easy to crack. Apart from hard work, good coaching is a must,” says Sadhana Singh, a resident of Bhagalpur, Bihar who has decided not to send her daughter for coaching out of the state. “There aren’t many good coaching institutes here and we don’t feel comfortable sending our daughter to a new place where she will have to stay alone.”

Besides safety issues, she observed that several students fall prey to depression while staying alone.

The issue of high suicides among trainees, especially in Kota, has been a cause of concern, for parents and the government.

Singh, however, feels that more seats will definitely help more women get admission into IITs.

Shivali Goyal, who studied in IIT Delhi and is against the increase, however, says the move would benefit girls from under-privileged background where parents think twice before spending on coaching.

Welcoming the decision, a former IIT director, who did not wish to be named, said it would make IITs more attractive to women.

“Given the very low number of women in IIT BTechs, schoolgirls who aspire to do engineering tend to opt for NITs and other engineering colleges in preference to IITs. The very low admission rate of females in IIT BTech discourages young schoolgirls from trying for IIT,” he said. “The moment the percentage of women in a few IITs increase, all IITs will be seen as more attractive to women and their percentages will also improve,” he said.

However, the professor warned against a one-size-fits-all approach.

“There are a few IITs that have higher female ratios and hence, may not have to implement the proposal fully. At the same time, the constraints in terms of hostel space, classroom and lab space will also differ for each IIT,” he said, stressing that implementation is the key.

May 7

GIVING WINGS TO IDEAS: FITT to work, from IIT Delhi

http://timesofindia.indiatimes.com/companies/iit-delhi-business-incubator/articleshow/58549354.cms

This is a column on India's most vibrant startup incubators and accelerators. These institutions are playing a vital role in mentoring and advising young and first-time entrepreneurs.

Technology Business Incubator, IIT Delhi

Founded: 1999

The idea: The industry-interface organisation at IIT Delhi - Foundation for Innovation and Technology Transfer (FITT) - helped create a technology business incubator unit to facilitate research spin-offs, as also to provide a startup platform for new age businesses to leverage the technology expertise at the Institute

Benefits to startups: Infrastructure, mentorship, access to IP and technology, access to investors and industry

USP: "Ours is a developed ecosystem that nurtures techno-entrepreneurship by providing end-to-end support solutions. It is a low cost proposition towards achieving their dreams," said Anil Walia, MD of FITT, IIT Delhi.

Progress: It has incubated 60 startups; 18 are currently resident; about 35 have received funding support

Success stories: KritiKal Solutions was the first student-faculty led startup from IIT Delhi. It works in the area of embedded systems and computer imaging for national and international clients. The company has over 150 customers across the globe. Medical tech startup Wrig Nanosystems raised funding of Rs 15 crore from Flipkart co-founders and others in 2015. Faros offers driver training simulators and has large clients like the Indian Army, Hero, CSIR, Coca-Cola and Ashok Leyland.

HRD ministry asks IITs to develop revenue model

http://www.livemint.com/Education/2C3uL7uKEhI7ef1cd2gOUI/HRD-ministry-asks-IITs-to-develop-revenue-model.html

The HRD ministry is of the view that a revenue model needs to be worked out before any further discussion on recent IIT fee hike and concessions

The ministry of human resources and development (HRD) has directed the prestigious Indian Institutes of Technology (IITs) to come up with a revenue model for their operations.

The move comes after the IIT directors had approached the ministry, saying the 122% fee hike introduced last year did "no good" to the institutes revenue-wise as lot of concessions were announced simultaneously.

The issue was also on the agenda of the meeting of the IIT Council, the apex coordination body of 23 IITs, which took place in Mumbai last week. However, the ministry is of the view that a revenue model needs to be worked out before any further discussion on fee hikes and concessions.

"Institutes had complained that they were not making any revenue despite multiple grants from the ministry. It is important to have a revenue model to increase the component of self-sustenance in the functioning of IITs," a senior official told *PTI*.

"Right now what we are deciding is based on perceptions. The minister proposed during the meeting that there is need for real data to show how things need to change. There is no revenue model, the IITs take money but have no idea how much money they will have next year, the policies keep changing," he added.

The IITs have been asked to submit data of the fees charged, revenue collected, expenditure, fee concessions and loans. "They have also been asked to submit their analysis of the data and draft of a revenue model which has suggestions on various factors including what kind of loan system needs to be built, who will pay the interest, what will be the interest component, for what time the loan should be interest-free and what should be the recovery options," the official said.

HRD minister Prakash Javadekar had assured IIT directors in last August of reviewing the decisions of hiking tuition fees by 122% and giving financial concessions to special category students, taken by his predecessor Smriti Irani.

The directors of several IITs had said that the financial concessions introduced for special category students had defeated the purpose of fee hike as there has been no revenue enhancement. There was also a proposal for replacing the fee waiver with reimbursement by either the HRD ministry or the ministry of social justice and empowerment. It has also been recommended by IITs that students from the economically backward sections should be given interest- free loans instead of full or partial waiver.

IIT-Kanpur first to establish Economic Sciences department

http://timesofindia.indiatimes.com/home/education/news/iit-kanpur-first-to-establish-economic-sciences-department/articleshow/58557717.cms

IIT-Kanpur is first among the IITs to start Economic Sciences department. The new department came into operation from Saturday and students clearing JEE Advanced 2017 and also willing to pursue Bachelor of Science (BS - Economic Sciences) program would get admission in it.

Director IIT-Kanpur, Prof Indranil Manna informed that after adding Earth Sciences Department in the last academic session, this year II-Kanpur is establishing New department of Economic Sciences. He said that the Economics program was already in existence in IIT-Kanpur but there was no separate department for the same. Deputy director, IIT-K, Prof Manindra Agarwal said that IIT-K is first amongst IITs to start Department of Economic Sciences.

"Economics was taught as a subject in IIT-Kanpur at the undergraduate level as a requirement in Humanities and Social Sciences department. From 2005, a unique five year integrated MSc programme was launched here where the students who came into this programme were selected through JEE Advanced. In 2011, this programme was reshaped as a four

year BS and five year BS-MS dual degree programme in Economics", said Prof Manna while interacting with reporters at the institute campus on Saturday evening.

On being asked about the need of constituting the dedicated department for the Economics course, Prof Manna mentioned that this undergraduate programme in Economics had become very popular with more and more higher ranking JEE students opting for it. Also the economics students continue to have excellent placements.

"Together this prompted us to go for a complete department on the existing programme (course). But this did not happen overnight as it involved one and a half years of thinking and consultations. National Advisory Board which was constituted by us having experts from IIM-Indore, TIFR, a professor of Standford university and others strongly recommended us to start the department after which the same was considered by the senate of IITKanpur before its approval", he mentioned further.

After the formal approval of the Board of Governors, the department has become formally operational from May 6, 2017, Director mentioned further.

Deputy Director, IIT-Kanpur, Prof Manindra Agarwal told reporters that IIT-Kanpur is first among the IITs to start Department of Economic Sciences. He said that more faculty members for this department would be recruited soon. He also mentioned that at present there is no separate building for the new department and it will continue to function in the premises of the Department of Humanities.

Head of department of Economic Sciences department, Prof Joydeep Dutta informed that the department will consist of 13 faculty members and it will continue to run four year BS and five year BS-MS dual degree programme in Economics along with PHD programme. He also mentioned that as BS-MS dual degree programme in Economics is very popular among the students, we are planning to start a new two year interdisciplinary Masters programme in Economic Sciences, a first of its kind in the country.

How many students have you placed, MHRD asks new IIMs

http://www.dnaindia.com/analysis/column-suicide-epidemic-creeping-into-education-system-2427915

Alarmed by poor placements at the new Indian Institutes of Management (IIMs), the ministry of human resource development (MHRD) has asked them to submit details about recruitment and salaries for the 2015-2017 batches.

Newer IIMs have been struggling to attract companies to recruit students even as placement season was fairly smooth in the older institutes. IIM Rohtak+ told TOI it has not been able to place 14 students, while IIM Sirmaur in Himachal Pradesh did not provide information. IIM Amritsar, which was established just two years ago, said all its students have got jobs. The average salary in these IIMs stands at Rs 11 lakh per annum; lower than the older IIMs where the average salary is in the range of Rs 24 lakh to Rs 50 lakh.

The department of higher education (management) has sought details of final placements from the IIMs at Sirmaur, Rohtak, Amritsar, Kashipur, Udaipur, Ranchi, Trichy, Shillong, Raipur, Bodhgaya, Nagpur, Sambalpur and Visakhapatnam.

MHRD under-secretary, Sanjeev Shrivastva, has asked the directors of the institutes to provide details like average, median, highest and lowest salaries for the selected students.The MHRD has directed the institute authorities to evaluate the reasons for poor placements. The MHRD has also sought steps being taken to ensure 100% placements.

In response to the MHRD letter, officials at IIM Amritsar, which was established in 2015, said its first batch had 44 students, who received a total of 48 offers from the 60 companies that came to campus."The highest salary offered was Rs 17 lakh per annum. The average salary was Rs 10 lakh per annum," said an IIM Amritsar official. The institute is mentored by IIM Kozhikode.

May 6

IIT-M makes white light from pomegranate, turmeric extracts

http://www.thehindu.com/sci-tech/science/iit-m-makes-white-light-from-pomegranate-turmeric-extracts/article18401531.ece

This could be used in applications such as tunable laser, LEDs and white light display

Dr. Vikram Singh, former research scholar in the Department of Chemistry, IIT Madras won the BIRAC Gandhian Young Technological Innovation (GYTI) Award 2017 for his work on producing white light emission using natural extracts.

Dr. Singh and Prof. Ashok Mishra from the Department of Chemistry, IIT Madras used a mixture of two natural extracts — red pomegranate and turmeric — to produce white light emission. The researchers used a simple and environment-friendly procedure to extract dyes from pomegranate and turmeric.

While polyphenols and anthocyanins present in red pomegranate emit at blue and orange-red regions of the wavelength respectively, curcumin from turmeric emit at the green region of the wavelength. White light emission is produced when red, blue and green mix together. This is probably the first time white light emission has been generated using low-cost, edible natural dyes. The results were published in the journal *Scientific Reports.*

“We had to mix the two extracts in a particular ratio to get white light,” says Dr. Singh, the first author of the paper; he is currently at Lucknow’s CSIR-Central Drug Research Institute (CDRI). By changing the concentration of the two extracts the researchers were able to get different colour temperature (tunability).

“When we mix the two extracts and irradiate it with UV radiation at 380 nm, we observed energy transfer (FRET mechanism) taking place from polyphenols to curcumin to anthocyanins, which helps to get perfect white light emission,” says Dr. Singh. For FRET mechanism to take place there must be spectral overlap between the donor and acceptor.

Energy transfer

In this case, there is a perfect overlap of emission of polyphenols with absorption by curcumin so the energy from polyphenols is transferred to curcumin. Since there is also a perfect overlap of emission of curcumin with absorption by anthocyanin, the energy of curcumin is transferred to anthocyanin.

As a result of this energy transfer from one dye to the other, when the extract is irradiated with UV light at 380 nm (blue region of the wavelength), the polyphenols emit in the blue region of the wavelength and transfers its energy to curcumin. The excited curcumin emits in the green region of the wavelength and transfers its energy to anthocyanin, which emits light in the red region of the wavelength.

“Because of the energy transfer, even if you excite in the blue wavelength we were able to get appropriate intensity distribution across the visual wavelength,” says Prof. Mishra, who is the corresponding author of the paper.

Without turmeric

Taking the work further, the duo produced carbon nanoparticles using pomegranate and to their surprise it was producing fairly green emission. So instead of using turmeric to get green wavelength, the researchers used carbon nanoparticles made from pomegranate extract. “We could get white emission, though it is not as white as when we use turmeric. It’s slightly bluish but well within the white zone,” says Prof. Mishra. “It is an attractive to use a single plant source to create white light emission.” The principle by which the pomegranate extract and carbon nanoparticles made from the extract is the same as in the case when pomegranate and turmeric extracts were used. The results were published in the *Journal of Materials Chemistry C.*

Though this natural mixture of dyes can be used in a wide variety of applications such as tunable laser, LEDs, white light display, much work needs to be done in terms of photostability and chemical stability before it becomes ready for translation. Biosystems have an inherent tendency to breakdown and so this has to be addressed.

Reversing drug resistance made possible

http://www.thehindu.com/sci-tech/science/reversing-drug-resistance-made-possible/article18401498.ece

Drug-resistant E. coli become sensitive to antibiotics when H2S synthesis is inhibited

Indian researchers have unravelled the mechanism by which hydrogen sulphide (H2S) gas produced by bacteria protects them from antibiotics and plays a key role in helping bacteria develop drug resistance. And by blocking/disabling the enzyme that triggers the biosynthesis of hydrogen sulphide in bacteria, the researchers from Bengaluru’s Indian Institute of Science (IISc) and Indian Institute of Science Education and Research (IISER) Pune, have been able to reverse antibiotic resistance in *E. coli* bacteria; *E. coli* bacteria were isolated from patients suffering from urinary tract infection. The results were published in the journal *Chemical Science.*

Antibiotics kill by increasing the levels of reactive oxygen species (oxidative stress) inside bacterial cells. So any mechanism that detoxifies or counters reactive oxygen species generated by antibiotics will reduce the efficacy of antibiotics. “Hydrogen sulphide does this to nullify the effect of antibiotics,” says Dr. Amit Singh from the Department of Microbiology and Cell Biology at IISc and one of the corresponding authors of the paper. “When bacteria face reactive oxygen species a protective mechanism in the bacteria kicks in and more hydrogen sulphide is produced.” Hydrogen sulphide successfully counters reactive oxygen species and reduces the efficacy of antibiotics.

The researchers carried out simple experiments to establish this. They first ascertained that regardless of the mode of action of antibiotics, the drugs uniformly induce reactive oxygen species formation inside *E. coli* bacteria. Then to test if increased levels of hydrogen sulphide gas inside bacteria counter reactive oxygen species produced upon treatment with antibiotics, a small molecule that produces hydrogen sulphide in a controlled manner inside the bacteria was used. “Hydrogen sulphide released by the molecule was able to counter reactive oxygen species and reduce the ability of antibiotics to kill bacteria,” says Dr. Singh.

The small molecule was synthesised by a team led by Prof. Harinath Chakrapani from the Department of Chemistry, IISER, Pune; he is one of the corresponding authors of the paper. “We designed the small molecule keeping in mind that synthesis should be easy, efficiency in producing hydrogen sulphide should be high and the molecule should release hydrogen sulphide only inside bacteria and not mammalian cells,” says Vinayak S. Khodade from the Department of Chemistry, IISER, Pune and one of the authors of the paper who contributed equally like the first author. The researchers were able to selectively increase hydrogen sulphide levels inside a wide variety of bacteria.

To reconfirm hydrogen sulphide’s role in countering reactive oxygen species, the team took multidrug-resistant, pathogenic strains of *E. coli* from patients suffering from urinary tract infection and measured the hydrogen sulphide levels in these strains. “We found the drug-resistant strains were naturally producing more hydrogen sulphide compared with drug-sensitive *E. coli,*” says Prashant Shukla from the Department of Microbiology and Cell Biology at IISc and the first author of the paper. So the team used a chemical compound that inhibits an enzyme responsible for hydrogen sulphide production. “There was nearly 50% reduction in drug-resistance when hydrogen sulphide production was blocked,” Dr. Singh says.

“Bacteria that are genetically resistant to antibiotics actually become sensitive to antibiotics when hydrogen sulphide synthesis is inhibited,” says Prof. Chakrapani. The multidrug-resistant *E. coli* regained its ability to survive antibiotics when hydrogen sulphide was once again supplied by introducing the small molecule synthesised by Prof. Chakrapani.

“As a result of our study, we have a found new mechanism to develop a new class of drug candidates that specifically target multidrug-resistant bacteria,” says Prof. Chakrapani.

The researchers already have a few inhibitors that seem capable of blocking hydrogen sulphide production. But efforts are on to develop a library of inhibitors to increase the chances of success.

How H2S acts

The researchers identified that *E. coli* has two modes of respiration involving two different enzymes. The hydrogen sulphide gas produced shuts down E. coli’s aerobic respiration by targeting the main enzyme (cytochrome bo oxidase (CyoA)) responsible for it. *E. coli* then switches over to an alternative mode of respiration by relying on a different enzyme — cytochrome bd oxidase (Cydb). Besides enabling respiration, the Cydb enzyme detoxifies the reactive oxygen species produced by antibiotics and blunts the action of antibiotics.

“So we found that hydrogen sulphide activates the Cydb enzyme, which, in turn, is responsible for increasing resistance towards antibiotics,” says Dr. Singh. “If we have a drug-like molecule(s) that blocks hydrogen sulphide production and inhibits Cydb enzyme activity then the combination will be highly lethal against multidrug-resistant bacteria.”

This combination can also be used along with antibiotics to effectively treat difficult-to-cure bacterial infections.

The link between hydrogen sulphide and Cydb enzyme in the emergence of drug resistance is another key finding of the study.

Novel molecule to treat cancer

http://www.thehindu.com/sci-tech/science/novel-molecule-to-treat-cancer-shows-promise/article18393709.ece

It binds to a protein and curbs the growth of tumours while sparing normal cells

A novel small molecule, designed and synthesised by Indian researchers, has shown promise in targeted killing of cancer cells.

The molecule (Disarib) works by binding itself to a protein called BCL2, which suppresses the death of cancerous cells. While BCL2 protein is produced in excess in cancer cells, its expression is almost undetectable in normal cells. Hence, Disarib targets and kills only cancer cells while sparing normal cells.

Inside a cell there is always a balance between proteins that promote cell death (apoptosis) and those that suppress cell death. When the proteins BAX and BAK that promote cell death get bound to BCL2, cell death is suppressed and cancer cells are able to live longer.

A team led by Sathees C. Raghavan at the Department of Biochemistry, Indian Institute of Science (IISc), Bengaluru, showed that Disarib was able to disrupt the binding of BCL2 and apoptosis-causing BAK protein. This action induced the death of cancer cells.

8-year research

Disarib is the culmination of eight years of research involving 24 researchers from eight different research groups across various labs. Unlike the FDA-approved BCL2 inhibitor ABT199, the small molecule synthesised by Prof. Raghavan's team binds predominantly to a different domain (BH1) of BCL2 and showed better efficiency in killing cancer cells than the FDA-approved inhibitor.

Also, compared with ABT199 inhibitor, the small molecule did not cause any side effects. The results were published in the journal *Biochemical Pharmacology*.

However, expression of BCL2 is low in certain cancer cell lines such as breast cancer, chronic myelogenous leukemia and cervical cancer. So the Disarib molecule would be ineffective in these cancers. Earlier studies had shown that once Disarib binds to BCL2, the proteins that promote cell death were able to create holes in the mitochondria leading to death of cancer cells.

"We have experimentally tested Disarib in all possible systems and the efficiency of Disarib in selectively killing cancer cells was high," says Supriya V. Vartak from the Department of Biochemistry, Indian Institute of Science (IISc) and one of the first authors of the study.

Studies were carried out on three animal models for three different cancers — lymphoma, breast adenocarcinoma and ovarian cancer. Similarly, studies were carried out using cancer cells lines.

“In every case, both in animal studies and cancer cell lines, the efficiency of Disarib to cause cell death and tumour regression was far superior compared with ABT199 when same dosage of Disarib and ABT199 were used,” says Prof. Raghavan. “This is why the molecule has to be taken up for further investigation.”

The team has already carried out toxicity studies. The next step will be to test the toxicity and efficacy of the molecule in cancer cells taken from patients, and also test it in combination with known cancer drugs. If results from humanised mouse models are also encouraging, the molecule can be taken up for clinical trials in humans.

IITs to work on formal methods of safety critical system

http://www.ptinews.com/news/8671921_IITs-to-work-on-formal-methods-of-safety-critical-system.html

The HRD ministry in partnership with the Railways under its IMPRINT programme is setting up the country s first knowledge centre on Formal Methods on Safety Critical Systems to be located at IIT Kharagpur.

An IIT-KGP spokesperson said the Centre, named 'FMSAFE' will function as a networked knowledge and research centre in collaboration with IIT-Kanpur and IIT-Bombay.

"India is recognised for its competence in software development, but design and validation of safety critical embedded software requires a different skill set," Prof Pallab Dasgupta from IIT-KGP, who is leading FMSAFE, said.

"What will be needed is a deep understanding on what is safety critical in Indian operating contexts. This is what the new centre aims at," Dasgupta said.

"Safety and reliability of electronics and software will be the determining factor for widescale automation in all sectors of technology. Through this centre we will bring the best experts on formal methods in the country together to accelerate the growth of safe embedded system solutions in the country," IIT-KGP director Prof P P Chakrabarti said.

Chakrabarti is also involved with the centre in his personal capacity as a renowned computer scientist.

Impacting Innovation and Research Technology (IMPRINT) is a pan-IIT and IISC joint initiative to develop a road map for research to solve major engineering and technology challenges in ten technology domains relevant in country.

Formal methods are a new genre of technique which use logic-based artificial intelligence theories to prove the correctness of software and electronic systems before they are deployed in critical safety applications.

These methods have been recommended in many international safety standards and are widely practiced by companies like Intel, Microsoft and Google.

A coordinated formal methods programme will then help indigenous developers in the country to aim for high degree of safety assurance, essential for global competence, Dasgupta said.

A modern car features millions of software code as most of its systems braking, fuel injection, steering are controlled by software which runs on embedded processors.

Almost all safety critical systems today rely on correct functioning of software-driven electronic components railway signalling systems, temperature control in atomic reactors, real time operation in smart electrical grids, and automated healthcare devices like pacemakers and insulin pumps.

However, despite extensive verification practices for such systems failures due to design errors continue and questions are raised to what extent software and electronics can be allowed to drive highly safety critical systems.

BARC, HAL, Indian Railways, Intel, Microsoft, TCS, Tata Motors, Synopsis have evinced interest in the system.

The formal methods research group at IIT-KGP already has long standing technology development partnerships with companies and PSUs, including Intel, General Motors, Synopsys, SRC, HAL and Railways. The new centre will build upon the existing foundations.

Students working on cutting edge projects under this centre will spend time in the three IITs along with Prof Sandeep Shukla from IIT Kanpur and Prof Supratik Chakraborty from IIT-Bombay, an IIT-KGP spokesperson said.

'Great Delhi Smog' of November 2016 may have caused deaths: Experts

http://www.business-standard.com/article/current-affairs/great-delhi-smog-of-november-2016-may-have-caused-deaths-experts-117050400978_1.html

CSE had described the situation as alarming and the smog episode as the worst in 17 years

The November-2016 smog episode in Delhi, when air pollution had hit perilous levels, might have temporarily triggered a "spike" in the rate of death in the national capital, according to experts.

In the first week of November last year, Delhi's air quality had plunged, as the toxic smoke of the Diwali fireworks and the hostile weather conditions, trapped the pollutants, which in turn shrouded the city, severely affecting even visibility.

Anurag Agarwal, a scientist with the Delhi-based CSIR- Institute of Genomics and Integrative Biology, said the situation could very well have been like London's Great Smog of 1952, which had caused at least 4,000 deaths.

"There could have been a spike. During the London smog there was a big jump in the rate of death. But we don't have a system where we maintain a proper and full-proof record of deaths occurring in the city," he told PTI.

But how will one establish causality i.e. How will it be possible to link the temporary spike in death rate, if any, to rise in pollution levels?

Anumita Roychowdhury, head of Centre for Science and Environment's (CSE) air pollution lab, said causality has been established in cases of few other severe spells of smog, and even in India data is available which indicates towards the same.

"An AIIMS study has shown how during winters there is a rise in the number of hospitalisations of those suffering from cardiac and respiratory ailments. So we may not have data immediately about any such rise during last November but existing data clearly shows something similar could have occurred," she said.

Agarwal, who focuses on the biological and clinical aspects of respiratory diseases, explained how the London death figures were arrived at and said the same procedure can be applied here.

He said two sets of data: a) the actual death rate observed during the smog episode, and b) the death rate recorded during the corresponding period the previous year when pollution levels were low, would have to be factored in.

"You extrapolate the previous year's death rate as the baseline death rate. Then the actual death rate observed during the corresponding period will have to subtracted from the baseline rate. The result would be the excess death rate," he said.

Agarwal said his institute had thought about undertaking a similar exercise but later shelved it as not all deaths are recorded in Delhi at this point in the absence of a centralised digital register of medical records.

However, Mukesh Khare, professor of environmental engineering in IIT-Delhi, sounded sceptical about any relation between death rate and pollution level, saying the London episode cannot be compared to what Delhi experienced.

"This is primarily, because the meteorological conditions in the two cities vary widely. There may have been a spurt in respiratory diseases, but one cannot say the same about deaths," he said.

The November spell of smog was such that for the first time in history of the city, schools had to be shut, coal- based power plants were closed, as part of a raft of emergency measures declared by the Delhi government.

The Centre for Science and Environment (CSE) had described the situation as alarming and the smog episode as the worst in 17 years.

IIT Bombay introduces short term course on Space Flight Mechanics

http://indiatoday.intoday.in/education/story/iit-bombay/1/946355.html

A week-long course on space flight mechanics has been launched by IIT Bombay.

A week-long course on space flight mechanics has been launched by Indian Institute of Technology (IIT), Bombay. Topics such as space missions and other technicalities involved in the space would be covered through the programme. Interested, eligible candidates can apply for the same by May 26.

The course will be conducted from June 19 to 23.

Who can apply?

Faculty members of degree level engineering colleges recognised by AICTE are eligible to attend the course.

Major topics to be covered

- Introduction to space missions
- Orbital and return missions
- Mathematical model for general ascent mission
- Single and multi-stage launch vehicle systems and their configuration design
- Introduction to basic orbital problem
- Two-body problem formulation and Kepler's laws
- Classical orbital elements
- Orbit determination from initial conditions
- Different types of orbits
- Perturbation due to Earth oblateness
- Solar radiation pressure effect on orbits
- Sphere of activity and Roche limit
- Introduction to orbital manoeuvres
- Introduction to inter-planetary missions
- Launch to orbit (SSTO, TSTO missions)
-

Benefits

- Participants are entitled for class second or third AC railway fare to and fro by the shortest route from college to IIT Bombay
- Auto rickshaw fare will be provided from Kanjurmarg/Andheri to IIT on the dates of arrival and departure
- Local participants will be paid second class railway fare or BEST Bus fare
- Accommodation will be provided in the students Hostels or Guest House on sharing basis
-

How to apply

Those interested in applying are required to send a demand draft of Rs 2000 in the name of 'Registrar IIT Bombay'.

Suicide epidemic creeping into education system

http://www.dnaindia.com/analysis/column-suicide-epidemic-creeping-into-education-system-2427915

Consider the latest data from the National Crime Records Bureau: one student commits suicide every hour in India. In 2015, close to 9,000 students took their lives

India’s academic institutions are caught in the throes of a silent epidemic that has barely received the attention it deserves. Both the academia and the government have failed to find redressal for a problem that is increasingly assuming terrifying proportions.

Consider the latest data from the National Crime Records Bureau: one student commits suicide every hour in India. In 2015, close to 9,000 students took their lives. Between 2011 and 2015, the suicide figure ballooned to 40,000. Leading the suicide tally is Maharashtra which saw 1,230 students commit suicide in 2015.

Tamil Nadu and Chhattisgarh followed in at second and third places with 955 and 730 suicides respectively. While there is no official authority maintaining a record on the number of suicides committed in the IITs, a blog run by Ram Krishnaswamy, a former student of IIT-Madras, puts the number of suicides in IITs since 1981 at 83. This is unpardonable given that IITs are India's premier technology institutes that admit the best and the brightest minds of this country. This alarming state of affair cannot be allowed to continue any longer, and some positive action on this front seems to be materializing finally.

The Indian Institute of Technology-Delhi this week decided to revise its syllabus so that there is a greater emphasis on practicals than on theory. It is expected that a shift of focus in its curriculum will effectively reduce the heavy pressure that often befalls IIT students.

Supplementing this step is another decision of the IIT council- the governing body of the 23 IITs in India- as per which wellness centres will be set up in these colleges. Hyper-competitive environments, pressures of securing a high-paying job, exalted academic expectations, addiction issues- all of these, and more, continue to mar the confidence and self-esteem of students not just in IITs but in institutes across the Indian education spectrum. Small steps are welcome but sans comprehensive policy-based measures, suicides may not end soon.

HRD Ministry's top priority: Fulfil budgetary commitment to overhaul UGC

http://economictimes.indiatimes.com/news/industry/services/education/hrd-ministrys-top-priority-fulfil-budgetary-commitment-to-overhaul-ugc/articleshow/58541870.cms

The Prakash Javadekarled HRD ministry's top priority these days is to fulfil its budgetary commitment to overhauling the University Grants Commission (UGC), the higher education regulator.

A committee has been set up to draw up provisions to categorise institutes on quality parameters, a measure aimed at helping decide how much autonomy they can be granted, people aware of the development told ET.

The panel, which includes officials from the UGC and the ministry, will also look into how the categories can be fitted into UGC's current regulatory structure. Discussions are also on to decide whether the UGC Act should be amended for a recast of the regulatory system. The persons cited earlier said the committee will use NAAC ratings and performance of an institute on the National Institute of Ranking Framework (NIRF) to evolve the best formula.

Plans are also afoot to repeal obsolete UGC regulations, reward outstanding institutes by converting them to universities and penalise the laggards and defaulters with closures and stoppage of grants.

For graded autonomy, it is proposed that three categories should be created based on quality parameters. The institutes/colleges in the top category will be given full autonomy for expansion, starting new courses and fixing of fee, among other benefits.

Institutions in the lowest category will be put through a UGC backed mentoring programme to help them move to the top category. However, if they fail to do so in a certain time frame, they will be targeted for closure or merger. The details of the mentoring module are being worked out, the officials cited earlier said. Outstanding institutions, on the other hand, will get a fasttrack passage to be converted into standalone universities.