

Newspaper Clips June 6, 2014

Indian Express ND 6/06/2014 P-2

IIT KANPUR unveiled a super computer, which ranks fifth in the country in terms of performance and is considered the best for educational institutions. It would be used for regular education, research and training purposes. The machine was assembled by a team headed by the IIT-Kanpur's deputy director SC Srivastava. It was unveiled by Srivastava and Ashish Dutta who is head of the computer centre.

Navbarat Times ND 6/06/2014 P-15

IIT कानपुर लॉन्च करेगा पोर्टेबल UAV

■ प्रवीन मोहता, कानपुर

आईआईटी कानपुर इस साल अगस्त में पोर्टेबल यूएवी (अनमैन्ड एरियल वीइकल) को पहली उड़ान के लिए लॉन्च करेगा। करीब 40 किलो वजन वाले इस यूएवी से 150 किमी के एरिया पर पैनी नजर रखी जा सकेगी। इस प्रोजेक्ट के को-प्रिंसिपल इन्वेस्टिगेटर डॉ. दीपू फिलिप के अनुसार, सितंबर-2013 से इस प्रोजेक्ट पर काम किया जा रहा है। आर्मी और पुलिस इस यूएवी को बैग में रखने के बाद कहीं भी ले जाकर लॉन्च कर सकेंगी। इस प्रोजेक्ट पर करीब 1.40 करोड़ रुपये का खर्च



आएगा।

क्या होगी खासियत : डॉ फिलिप के अनुसार, लो एल्टिट्यूड लॉन्ग एन्ड्योरेंस एयरक्राफ्ट को हवा में दौड़ाने के लिए

खास बातें...

- बेहद हल्के यूएवी को टेक-ऑफ करने के लिए रन-वे की जरूरत नहीं
- ट्रैफिक कंट्रोल, जंगलों पर नजर रखने और पेट्रोलिंग के लिए अहम
- 150 किमी के एरिया पर रखेगा नजर, हवा में 10 घंटे भरेगा उड़ान

किसी रन-वे की जरूरत नहीं होगी। इसे 30-50 मीटर लंबी सड़क से ही टेक-ऑफ कराया जा सकेगा। जमीन से करीब 2000 मीटर की ऊंचाई पर उड़ने में सक्षम इस

मानवरहित यान से 150 किमी की परिधि पर नजर रखी जा सकेगी। यह लगातार हवा में 10 घंटे रह सकेगा। गैसोलीन और ठोस ईंधन से चलने वाले 28 सीसी जर्मन इंजन को इलेक्ट्रॉनिक सिस्टम से कंट्रोल किया जा सकेगा। आम यूएवी से अलग इसकी बॉडी कार्बन फाइबर की होगी, जिससे इसका वजन काफी कम होगा। इस मशीन के दोनों तरफ के विंग्स खोलकर इन्हें बैग में रखा जा सकेगा। आर्मी और पुलिस के यह काफी फायदेमंद रहेगा।

ज्यादातर टेक्नॉलजी देसी : फिलिप के अनुसार, इस यूएवी में इंजन के अलावा ज्यादातर टेक्नॉलजी देसी है।

जेईई-एडवांस : तीन राउंड में मिलेगी सीट

अमर उजाला ब्यूरो

नोएडा। आईआईटी के लिए जेईई-एडवांस की काउंसलिंग में सीट/कोर्स अलॉटमेंट की प्रक्रिया तीन राउंड में पूरी होगी। पहले दो राउंड में छात्रों को अलॉट होने वाली सीट फ्रीज करने की इजाजत नहीं होगी। हर राउंड के बाद वेकैसी के आधार पर सीट अपग्रेड होंगी। काउंसलिंग के लिए जेईई ऑनलाइन च्वॉइस फिलिंग एंड सीट एलोकेशन (जेओसीएसए) का कार्यक्रम जारी किया गया है।

दरअसल, जेईई-एडवांस का रिजल्ट 19 मई को घोषित होगा। इसके बाद जेओसीएसए पोर्टल शुरू हो जाएगा। इस पर छात्रों को जेईई-एडवांस से जुड़ी अपनी जानकारी देनी होगी, जिसके बाद उन्हें पासवर्ड उपलब्ध कराया जाएगा। इस पासवर्ड की मदद से पोर्टल पर एंट्री मिलेगी और च्वॉइस-फिलिंग की प्रक्रिया पूरी होगी। इसके लिए छात्रों को 24 जून तक का समय दिया जाएगा। पोर्टल को इस तरह से तैयार किया गया है कि छात्र कितनी भी बार अपनी मनपसंद सीटों को चुन सकते हैं बदलाव कर सकते हैं। अपनी च्वॉइस के मॉडिफिकेशन सेव कर अपनी च्वॉइस शीट भी बना सकते हैं। जेईई ने यह भी स्पष्ट कर दिया है, कोई छात्र ऑनलाइन च्वॉइस फिलिंग के लिए शॉर्टलिस्ट किया गया है तो सीट अलॉटमेंट की गारंटी नहीं है।

पहले दो राउंड में मिली सीट नहीं हो पाएगी फ्रीज

20 से 24 जून तक होगी च्वॉइस लॉकिंग प्रक्रिया

कुल 9784 सीटों पर मिलेगा एडमिशन का मौका

ऐसे होगा एलोकेशन

काउंसलिंग में शामिल 9784 सीटों पर कोर्स/सीट एलोकेशन तीन राउंड में होगा। पहला एक जुलाई को घोषित होगा। दूसरा 8 जुलाई और तीसरा राउंड 12 जुलाई को घोषित होगा। पोर्टल पर ही इसकी जानकारी मिलेगी। छात्र सीट न लेना चाहे तो अगले राउंड में उसे मौजूदा वेकैसी पर अपग्रेड किया जाएगा। पहले दो राउंड के बाद छात्रों को अपनी सीट फ्रीज करने की इजाजत नहीं होगी।

आरंभिक शुल्क ऑनलाइन

सीट अलॉटमेंट के बाद छात्रों को ऑफर स्वीकार करते हुए आरंभिक शुल्क ऑनलाइन जमा करना होगा। इसके लिए जनरल और ओबीसी छात्रों को 60 हजार और एससी-एसटी छात्रों को 20 हजार रुपये जमा कराने होंगे। फीस जमा करने के बाद संबंधित कैम्पस में रिपोर्ट न करने पर पैसा वापस नहीं होगा।

Courses scrapped at IIT Roorkee and ISM Dhanbad

[Vanita Srivatava](#), Hindustan Times New Delhi, June 05, 2014

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<http://www.hindustantimes.com/india-news/courses-scrapped-at-iit-roorkee-and-ism-dhanbad/article1-1226437.aspx>

The number of IIT seats has declined this year, even as three unpopular courses have been scrapped and some new ones introduced.

More than 1.19 lakh students on May 25 had appeared for the Joint Entrance Examination (Advanced) – the gateway to the Indian Institutes of Technology (IITs) and the Indian School of Mines (ISM), Dhanbad.

The three discontinued courses are pulp and paper engineering at IIT Roorkee; and mining engineering with MBA, and petroleum engineering (dual degree) at ISM Dhanbad.

The total number of seats has also gone down to 9,784 this year from 9,867 last year.

However, new courses have been introduced at the IITs in Bhubaneswar, Hyderabad and Gandhinagar.

Experts believe that discontinuance of unpopular courses will help reduce the number of seats going vacant. Last year, around 250 JEE (Advanced) seats had remained vacant.

"Some courses in the IITs are unpopular. Even if students opt for them, they don't pursue them with any interest and usually leave midway," said an IIT professor on condition of anonymity.

Other unpopular courses include mineral engineering with MBA and ocean engineering.

"Students prefer mainstream engineering. While all courses have their own benefits and a well-designed job market, too much specialisation at an undergraduate level is not preferred by students," said a former IIT director.

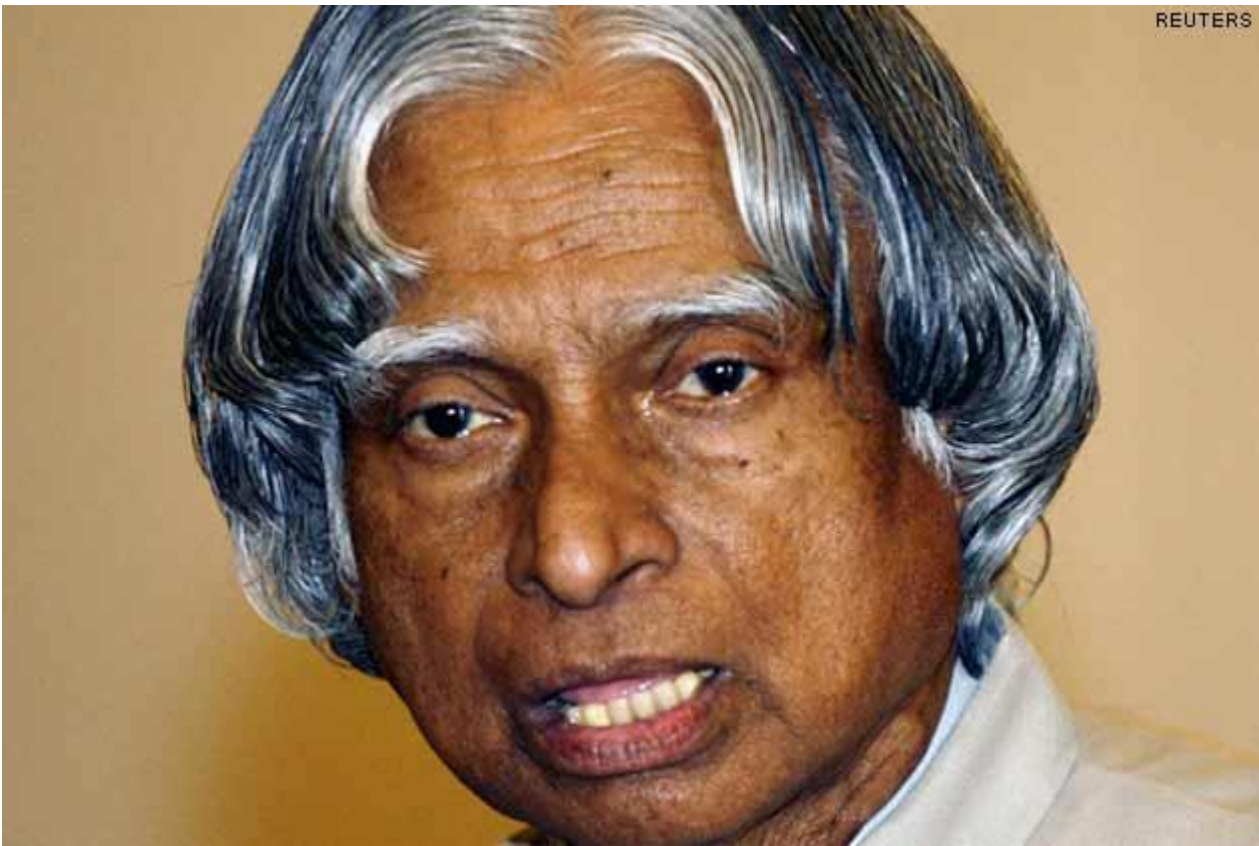
Abdul Kalam motivates IIT students, calls for bridging rural-urban divide

<http://ibnlive.in.com/news/abdul-kalam-motivates-iit-students-calls-for-bridging-ruralurban-divide/477066-3-236.html>

Former President APJ Abdul Kalam on Thursday stressed on bridging rural-urban divide in the world and said fruits of growth must reach every section of society.

"Inequality between rural and urban population in the world must be removed. Equal distribution of resources will help in bridging the poor-rich divide and it is necessary that fruits of rapid economic growth reach every section of society," he said.

Kalam was speaking at the convocation ceremony of the Indian Institute of Technology-Indore. Time has come to ensure sustainable and inclusive development through innovative ideas so that facilities in urban centres are available in rural areas too, he said.



Abdul Kalam motivates IIT students, calls for bridging rural-urban divide

"Rural population is blessed with natural resources and equipped with traditional skills. Both these advantages should be used judiciously to change their lives for better."

Kalam said the students receiving degrees today should mull how and what they can give back to society and contribute in its growth. Earlier, around 120 students were awarded B.Tech degrees in various streams.

SAVING THE ENVIRONMENT

Soon, 'green' tag for AIIMS; revamp for healthcare sector

ON THE CARDS Week-long sanitation drive planned in hospitals across Delhi

HT Correspondent

■ htreporter@hindustantimes.com

NEW DELHI: The country's premier medical institute, the All India Institute of Medical Sciences (AIIMS), will soon turn into a green hospital.

On the occasion of World Environment Day Union health minister Dr Harsh Vardhan announced his resolve for greening the health care sector and converting AIIMS into a 'green hospital' by adopting environment-friendly methods for disposal and recycling of medical waste.

"With environmental degradation and environmental risks emerging as the single biggest source of diseases — from ordinary water-borne diseases to cancers — there is a need to set up a network of capacity-building institutions all over India modelled on the line of All India Institute of Hygiene and Public Health, Kolkata, and the Centre for Occupational and Environmental Health in Delhi's Maulana Azad Medical College," he said.

For this to happen, the hospital will be moved away from using conventional energy that is responsible for polluting the



■ Union Health minister Harsh Vardhan at the World Environment Day 2014 symposium in New Delhi. SUSHIL KUMAR

environment and adding greenhouse gases. The aim would be to reduce the hospital's energy consumption and maximise use of solar energy and other similar sources.

The health and family welfare ministry plans to develop a management information system using IT tools for the benefit of central and state health departments.

"The UN, WHO and all inter-

national institutions have warned of the dangerous link between deteriorating environment and disease outcomes. We need to fight this negative impact by applying established tools to gather information and sharing it with the community for involving them in this movement of creating a healthy and safe environment," he added.

Dr Vardhan informed that a

week-long drive for enhanced sanitation at hospitals across the national Capital will also be started by the health ministry.

"The unattractive facade of government hospitals should become a thing of the past. We do not have to be ostentatious to do that. Beginning with AIIMS-New Delhi, I want all public hospitals to resonate with inclusivity and enlightenment," he said.

Mint ND 6/06/2014 P-5

HIGHER EDUCATION

Government to enact student-friendly laws

HRD wing wants to revive and enact laws to provide statutory status to some elite educational institutes

BY PRASHANT K. NANDA
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NEW DELHI

In a move that will help students, the new government wants to revive and enact laws to provide statutory status to some elite educational institutes so that they are able to award professional degrees.

These central institutions—the Indian Institute of Information Technology at Kancheepuram and the Schools of Planning and Architecture in Bhopal and Vijayawada—were established in the past five years where more than 700 students have completed their programmes, but were not awarded degrees because there was no enabling legislation.

While reviewing the progress of the higher education department, human resource development (HRD) minister Smriti Irani “expressed her concern” about the current state of affairs related to these two draft legislation, the ministry said in a statement after the meeting on Thursday.

The previous United Progressive Alliance government had introduced the Indian Institute of Information Technology (IIIT)

Bill in the Lok Sabha in March 2013, but was unable to ensure its passage. The School of Planning and Architecture Bill was not tabled. The HRD ministry wanted to enact them through ordinances, but failed to get the necessary approvals.

“The minister directed the officers concerned to immediately take up the matter in the coming Parliament session so that both the Bills, which are ready, could be passed,” the ministry statement said on Thursday.

After the National Democratic Alliance took charge on 26 May, this is the first key decision by the HRD ministry to revive and push pending education legislation. Nearly a dozen education reform Bills lapsed during the previous Lok Sabha’s tenure. The two draft laws will have to be introduced afresh.

“In the meanwhile, efforts would also be made to explore the possibilities to have these institutions declared as off-campus centre of one of the existing institution so that standby arrangement of conferring degrees could be put in place,” the ministry said.

For example, the school in Bhopal and Vijaywada can be made off-campus centres of the School of Planning and Architecture in Delhi till the Bills are passed in Parliament.

This beginning augurs well for the sector as a non-partisan approach to education reform will benefit the country, a ministry official said. The official, who re-

quested not to be named, said that the new government pushing for legislation of its predecessor speaks volumes about how the NDA looks at the task at hand.

The draft legislation are ready and can be introduced during the budget session of Parliament, the official said.

The IIIT Bill seeks to declare some technology institutions as institutions of national importance and will create mechanisms to establish new IIITs. Objectives of such national institutes include advancing new information and innovation in IT sector and improve capabilities of youth in the sector.

Some of the education Bills of the previous government were well thought through but could not see their logical end, said Ajit Rangnekar, dean of Indian School of Business in Hyderabad. “The new government has to be enabling in nature for the education sector,” Rangnekar said. “The aim should be to remove impediments, enable and encourage through required legislation and orders for the sector to grow.”

India has one of the biggest education system in the world with over 36,000 colleges and over 600 universities. has estimated The country’s education market is likely to be worth ₹5.9 trillion in 2014-15 compared with ₹3.33 trillion in 2011-12, according to a report by India Ratings and Research Pvt. Ltd, the local unit of Fitch Ratings Inc.

Mail Today ND 6/06/2014 P-10\11

Students & teachers may have seen a glimmer of hope with the BJP

FYUP's fate

By Mail Today Bureau in New Delhi

THOUSANDS of disgruntled Delhi University students and teachers fighting the Four Year Undergraduate Programme (FYUP) tooth and nail may have seen a glimmer of hope with the BJP coming to power at the Centre, but respite still remains elusive.

Sources say that Union minister for Human Resource Development Smriti Irani could potentially prove to be a beacon of hope for the students and faculty members grappling with the after-effects of the introduction of FYUP, it may be a long time before the programme is withdrawn.

Even as Irani is keen on executing the party's poll promise of scrapping the FYUP, DU vice-chancellor Dinesh Singh chose to remain tight-lipped on the matter, saying, "We will do our work and the government will do theirs. We all will follow the Constitution".

Repeated attempts to contact Irani yielded no result.

Hinting that students and teachers will have to wait for the three-year system to be re-introduced, sources in the HRD ministry revealed it was not a decision that could be taken in isolation and that too at the drop of a hat. The proposal of scrapping the current system would have to be discussed not just with DU officials, but authorities at the University Grants Commission (UGC) and other decision-making bodies as well.

Sources revealed that since the

RAPID FIRE NANDITA NARAIN president, DUTA

How did your meeting with the HRD minister go?

Representatives of all groups including DUTA and the student council were a part of the meeting. Our main concern was that there was no dialogue happening with the V-C and thus our views had no representation. We talked on a range of subjects like the FYUP and she said she will examine each point.

What were the issues discussed with V-C Dinesh Singh?

It was actually the HRD minister who supported us and then the dialogue with the V-C happened. We discussed about the withdrawal of FYUP and an urgent need for a student-teacher committee to be set up in every college.

Is it true that FYUP is being rolled back? We are strictly against the FYUP as well as the semester system. Some action will be taken soon.

How will you manage the inconsistencies that will be created with the current batch which is already one year into the programme?

We have offered a solution for that as well. The subjects that were spread over 4 years could be managed in the second and the third year by adding more subjects. The fourth year may be optional for the current batch.

(As told to Prerna Lidhoo)



HRD Minister Smriti Irani

decision is monumental and involves poll promises made by the party, they would have to factor in the viewpoints of all those involved with the decision-making process, across the board.

Officials also revealed that the transition would be doubly difficult for the under-graduate students, who were currently in the middle of the four-year programme. While in the three-year format students were introduced to the course right from the beginning, FYUP requires students to complete a year of 11 foundation courses, which is an amalgamation of several subjects, including ones that students finally major in.

Delhi University Teachers Association (Duta) president Nandita Narain who has spearheaded the campaign against FYUP met the V-C after meeting Irani, said Singh was non-committal in rolling back FYUP.

DU scrapped its three-year system and introduced the FYUP from the 2013 academic session. Considered Singh's brainchild, the move has drawn severe flak from the academic fraternity as well as students. Earlier on May 30, a delegation of DU teachers and students submitted a memorandum to Irani, urging her to scrap the programme and terminate Singh's services. "All the seven parliamentarians from Delhi have already met Irani and asked her to roll back FYUP," said DUTA executive member Sankat Ghosh.

Programme structure

FIRST YEAR

FIRST SEMESTER

July-Dec, 2014: Study four papers of Foundation Courses and two papers of Discipline Course (DC I).

Study a Foundation Course called Language, Literature, and Creativity-I (Hindi/Sanskrit/MIL/Persian/Arabic) for five periods per week. It will have four lectures and one student presentation. The other three Foundation Courses will be taught for three periods per week.

Study DC I five times per week. DU may distribute free laptops during this semester.

There will also be two periods per week for Integrating Mind Body & Heart. Discussions on life skills, inspirational leaders like Gandhi, physical and mental health will be a part of this course.

TAKE EXAMS IN DECEMBER

SECOND SEMESTER

Jan-May, 2015: Study three Foundation Courses, including the second part of Language, Literature, and Creativity-II (English), two papers of DC I and one paper of an Applied Course designed by respective departments to enhance students' employability.

There will be five periods per week for DC I and three periods every week for the Applied Course.

Take part in annual college festivals and university festival called Antardhwani during January-February.

Exams will be held in May-June. Try and get at least 40 per cent in aggregate to move over to next level. Clearing all papers will not be mandatory.

JUNE-JULY, 2015: SUMMER VACATION

Sale of offline form and online registrations:
2,16,000

Forms submitted online:
57,577

Number of forms submitted offline:
39,209



HRD minister eyeing 8 more IITs

With HRD Minister Smriti Irani setting her eyes on the expansion of IIT's in the country, engineering aspirants maybe in for some good news this year.

While in 2009, the IITs saw one round of expansion with 17 IITs in the country at present, the number is likely to go by another eight.

After Irani took over the ministry, the expansion of the IITs was seen as one of the biggest projects that the minister had up her sleeve, considering that the party had promised an IIT in every

state in its election manifesto. Though the plan is ambitious, questions remain regarding the funding and infrastructure that would be required for this purpose.

Sources in the HRD ministry argued that not only are some of the IITs yet to get space to set up a permanent campus, the cost factor and funding for the newly proposed IITs in places such as Kerala, Karnataka, Jharkhand and Goa, among others was not feasible given the fact that the proposal to set up a campus in Kerala's Pallakkad district had been turned down.

On Thursday, Irani met directors of the six IITs seeking their suggestions for improvement. This could prove to be a herculean task since the premier engineering institute has been grappling with a staff crunch for a long time now. While the IITs had been actively considering hiring external faculty, they had also been banking on their research scholars to join the teachers. Late last year, IIT-Delhi's director R.K. Shevgaonkar had stated that the crunch was primarily because of better opportunities that engineering graduates were presented with, on completion of their course.

Shaswati Das/New Delhi

In 2009, 17 new IITs were added. Now eight new centres of the engineering institute may come up soon.

Times of India ND 6/06/2014 P-10

Voices grow louder for ending 4-year programme

Shreya Roy Chowdhury &
Manash Pratim Gohain | TNN

New Delhi: The anti-FYUP brigade is growing. While some students' and teachers' groups have opposed the four-year undergraduate programme practically from the moment Delhi University authorities announced it, others, who were initially supportive or silent are now against it too.

The previous DU Teachers' Association began the protests and was joined by left-leaning All India Students' Association (AISA) and Democratic Teachers' Forum. The nature of the groups participating meant that initially,

at least, DU authorities were able to dismiss the anti-FYUP campaign as yet another issue for the left to bellyache over. That is clearly not the case anymore.

The left and the right have been united on this issue with right-wingers Akhil Bharatiya Vidyarthi Parishad and National Democratic Teachers' Front joining in. AISA and ABVP have been protesting at registration centres and Open Days even this admission season.

And now, even the National Students' Union of India (NSUI)—which supported FYUP when it was launched—is against it. "Instead of rejecting the reforms outright, we



Students' bodies are united in their stand against FYUP

collected feedback from students over the past year. Majority of students said they are not happy with FYUP and NSUI finally is in a position to oppose FYUP," says Amrisha Ranjan Pandey, national

spokesman, NSUI.

That a strong stand against FYUP helps gain traction with students was demonstrated by AISA in the 2013 DU Students' Union elections. AISA members joined in

marches, stood vigil outside counselling centres and explained the problems with FYUP to new applicants and conducted a referendum among students on FYUP in August 2013. A few weeks later, AISA recorded their best performance in DUSU elections and ABVP won the polls.

"AISA congratulates thousands of students who actively fought against FYUP," says AISA's Sunny Kumar, "While it is a time to rejoice...we should not be complacent. There are reports that the VC is trying to influence the decision of the HRD minister to scrap FYUP. AISA calls upon the student community to remain vigilant against any at-

tempt to prolong the anti-student FYUP in DU."

"We have fought for roll back of FYUP since the beginning. After ABVP's candidates won DUSU elections last year, even DUSU joined the struggle. It's heartening to know that MHRD is working towards a roll back," says Rohit Chahal, national secretary, ABVP.

FYUP's detractors have also found support from Krantikari Yuva Sangathan and School of Open Learning Students' Union—both representing SOL students. Groups such as Academics for Action and Development and Indian National Teachers' Congress, however, are still silent.

Deccan Herald ND 6/06/2014 P-1

UGC panel to review DU 4-yr degree course

Prakash Kumar

NEW DELHI, DHNS: The four-year undergraduate degree programme of Delhi University, which has faced stiff opposition from a section of teachers and students since its inception last year, is to be reviewed by a standing committee of the University Grants Commission (UGC).

The Human Resource De-

velopment (HRD) ministry will refer the contentious programme to the panel, which will decide the future of the programme.

"The HRD ministry has not taken any decision so far. The matter will be placed before the UGC standing committee for its suggestions, based on which a final decision will be taken," Delhi University sources said.

The committee was set up

by the UGC last year after the four-year undergraduate programme drew flak from the Delhi University Teachers Association (DUTA) and a section of students. The task of the UGC panel was mainly to monitor the implementation of the programme, since it entailed a significant departure from the existing three-year degree programme. The committee was also mandated to advice on its

curriculum and other issues.

The HRD ministry, however, remained tight lipped, amidst reports of its bid to scrap the controversial programme as it was a promise made by the Bharatiya Janata Party in its poll manifesto for Delhi.

Soon after HRD minister Smriti Zubin Irani assumed charge, a delegation of Delhi University teachers and students met her, demanding

scrapping of the programme, introduced amidst strong opposition last year.

They demanded that provision should be made for the students of the four-year programme admitted in July last year to be awarded an Honours degree in three years.

The delegation also demanded removal of DU Vice Chancellor Dinesh Singh, calling him "autocratic".

Hindustan Times ND
6/06/2014 P-13

SMRITI WANTS TO HELP STUDENTS GET DEGREES

HT Correspondent

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NEW DELHI: The HRD ministry is in the process of exploring the possibility of declaring some institutes as off-campus of statutory institutions to help students get their long-pending degrees.

HRD minister Smriti Irani had expressed concerns over the fact that 700 students from SPA Bhopal, SPA Vijayawada and IITD&M Kancheepuram had not been able to get their degrees for the last several years.

The minister directed the officers concerned to immediately take up the matter in the coming Parliament session. In the meanwhile, efforts would also be made to explore the possibilities to have these institutions declared as off-campus centre of an existing institution so that pending degrees could be conferred.

As part of the workshop on Science and Heritage Initiative (Sandhi) representatives of IITs including some IIT directors had an interaction with HRD minister Irani this week.

Just after taking over as HRD minister, Irani had taken feedback from all IITs on how to improve the overall system.

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Need help? Strap on extra arms

MIT Experts Build Robotic Limbs To Share Workload

James Vincent

While most research into robotic limbs focuses on replacing lost arms or legs, a group of engineers from Massachusetts Institute of Technology (MIT) have imagined a future where anyone can strap on an extra pair of arms when they need a helping hand. Their creations are known as SRLs — or Supernumerary Robotic Limbs.

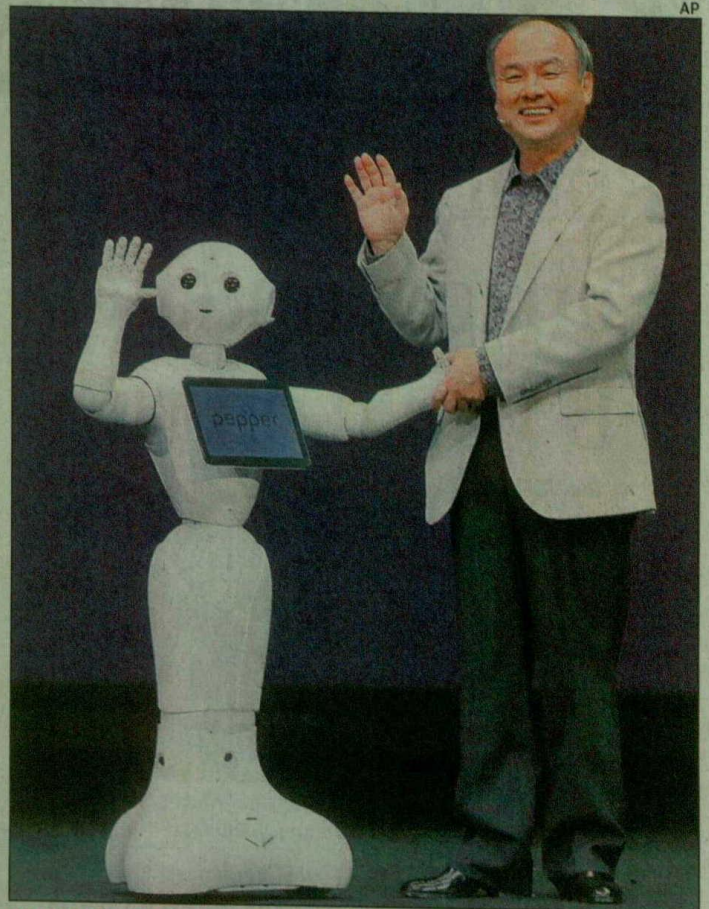
“Imagine that one day humans will have a third arm and a third leg attached to their body,” writes the team from the d’Arbeloff Laboratory for Information Systems and Technology. “The extra limbs will help them hold objects, support the human body, share a workload, and streamline the execution of a task. If the movements of such supernumerary limbs are tightly coupled and coordinated with their arms, the human users may come to perceive the extra limbs as an extension of their own body. The goal of our work is to build a co-robot that becomes a functional extension of the human body.”

Current prototypes for supernumerary limbs weigh

just 4.5kg, strapping around the waist and shoulders like a backpack while the robotic arms reach over the users’ shoulders. Videos show them being used in construction-like situations (Boeing has been sponsoring some of the research, wanting to protect their aging workforce from injury) with the limbs holding up a sheet of material to the ceiling while the wearer screws it in place.

Researchers in the same lab are working on a similar rig where the arms are placed at waist height allowing them to brace the wearer against either the floor or a facing wall. The latter could be useful when using, say, a powerful drill — although the researchers have suggested more mundane functions such as opening a door when the wearers’ hands are full.

The difficulty for engineering the arms is of course getting them to do what the user wants intuitively. Current prototypes simply mimic what the user is doing by monitoring to sensors worn the wrist, but researchers say they’re testing different “behavioural modes” to make the limbs more helpful. THE INDEPENDENT



AN EMOTIONAL BOT FOR COMPANY: A cooing, gesturing humanoid on wheels that can decipher emotions has been unveiled in Japan by billionaire Masayoshi Son who says robots should be tender and make people smile. Son’s mobile phone company Softbank said on Thursday that the robot it has dubbed Pepper will go on sale in Japan in February for 198,000 yen (\$1,900). The machine, which has no legs, but has gently gesticulating hands appeared on a stage in a Tokyo suburb, cooing and humming. It dramatically touched hands with Son in a Genesis or “E.T.” moment. Cuddly robots are not new in Japan, a nation dominated by “kawaii,” or cute culture, but no companion robot has emerged a major market success yet

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Roof tiles to help fight air pollution

New Coating On Tile Removes 97% Of Smog-Causing Nitrogen Oxides

Washington: An innovative and inexpensive way to fight air pollution has been developed — a roof tile coating that removes up to 97% of smog-causing nitrogen oxides.

A team of University of California, Riverside's Bourns College of Engineering students created a new titanium dioxide roof tile coating that when applied to an average-sized residential roof breaks down the same amount of smog-causing nitrogen oxides per year as a car driven 17,703km.

They calculated 21 tonnes of nitrogen oxides would be eliminated daily if tiles on one million roofs were coated with their titanium dioxide mixture. They also found it would cost only about \$5 for enough titanium dioxide to coat an average-sized residential roof.

Nitrogen oxides are formed when certain fuels are burned at high temperatures. Nitrogen oxides then react with volatile organic compounds in the presence of sunlight to create smog. Currently, there are other roofing tiles on the market that help re-



Reuters

GASPING FOR BREATH: Researchers said that 21 tonnes of nitrogen oxides would be eliminated daily if tiles on one million roofs were coated with titanium dioxide mixture

duce pollution from nitrogen oxides. However, there is little data about claims that they reduce smog.

The students set out to change that. They coated two identical off-the-shelf clay tiles with different amounts of titanium dioxide, a common compound found in everything from paint to food to cosmetics. The tiles were then placed inside a miniature atmospheric chamber that the students built out of wood, Teflon and PVC piping.

The chamber was connected to a source of nitrogen oxides and a device that reads concentrations of nitrogen oxides. They used ultraviolet light to simulate sunlight, which activates the titanium dioxide and allows it to break down the nitrogen oxides. They found the titanium dioxide coated tiles removed between 88% and 97% of the nitrogen oxides. PTI