

Newspaper Clips

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IIT fee hike won't fix financial woes

Tuition fee does little to even meet the institutes' operating expenses; directors differ on fee hike

KALPANA PATHAK & M SARASWATHY
Mumbai, 8 January

The Indian Institutes of Technology (IITs) have raised the tuition fee by 80 per cent, from ₹50,000 to ₹90,000 per annum, the steepest so far after a four-year hiatus. Yet, this would do little to help the financial condition of these institutes.

IITs, 80 per cent of whose expenses are met through financial grants from the ministry of human resource development (MHRD), say tuition fee does little to even meet their operating expenses.

"Education provided at the IITs is highly subsidised. We spend around ₹2.5 lakh per student per year, considering operating costs alone. We cannot expect student fees to take care of the entire expenses — capital plus operating costs," said Devang Khakhar, director, IIT-Bombay.

IIT-Bombay's yearly expenditure is ₹250 crore. The institute receives around ₹200 crore in grants from MHRD and the rest is generated by tuition fee and other miscellaneous charges from students. Salary and staff cost, including electricity and sundry bills, goes up by around 10 per cent each year at IIT-Bombay.

The IITs say with salaries and staff

CAMPUS COST

- 80% of the expenses by IITs are met through MHRD grants
- Increase in the fee will give the institutes little relief
- Fee for SC/ST students, who constitute 22% of the students, are fully waived
- 25% of the students, whose parental annual income is less than ₹4.5 lakh, are entitled to fee waiver
- Private engineering colleges charge anywhere between ₹40,000 and ₹1 lakh per student, annually
- Being on the priority list of banks, IITs are expected to boost the loan business of the lenders
- Excellent job prospects of IITians negate the risk of repayment defaults

cost being fixed, they have to budget for expenditures beyond that. The marginal amount left is then used for other developmental activities on the campus.

At the IITs, the fee for about 22 per cent of students, from the SC/ST category, are fully waived. Also, up to 25 per cent of the students, whose parental annual income is less than ₹4.5 lakh,

are entitled to fee waiver. The remaining students pay the full fee.

"The fee had to be increased.

However, since the fee cannot be increased every year, the government outlay for us has to be adequate," said Gautam Barua, director, IIT-Guwahati.

IIT-Guwahati has an annual expenditure of ₹110 crore, and nearly 15 per cent of this — about ₹15-16 crore — comes from fees. Barua said with the increase, it would now contribute about 17 per cent.

In contrast, the top 20 private engineering institutes in the country charge anywhere between ₹40,000 and ₹1 lakh per student, per annum. These institutes, which increase the tuition fee every few years, say they might do so this academic year, too.

BITS Pilani, for instance, is planning to increase the fee for its bachelors engineering programme from the present ₹1.4 lakh to ₹1.7 lakh for the next academic year. The institute says it has to increase the fee to neutralise inflation. The fee in 2011 for the institute was ₹1.25 lakh. It subsidises the programme by getting money from industry.

IIT fee, on the other hand, has always been low. When IITs began operations in 1953, they charged an annual fee of ₹500 for their flagship undergraduate engineering pro-

Banks see biz growth

Banks said granting loans to IITs is a priority. "IITs are top institutions and, hence, loans for students taking admissions is a priority for us. With the hike in fees, the size of loans will also increase, subject to norms. It will grow our business," said Salil Kant Saran, chief general manager (personal banking) at State Bank of India (SBI).

SBI, the country's largest lender, had a portfolio of educational loans worth ₹13,491 crore at the end of September 2012.

Another public sector executive heading retail banking said, "We never refuse a loan to anybody who gets admission into IITs and IIMs. In fact, there is intense competition among banks and they (students) are hotly pursued. The risk of repayment defaults are negligible, as students have excellent job prospects." **BS REPORTER**

gramme. In the past, IITs have revised their fee only twice — in 1998 and 2008. In 2008, IITs had doubled the fee for undergraduate courses from ₹25,000 to ₹50,000 a year.

Deccan Herald ND 09/01/2013 P-8

Govt wants relief for girls in IIT exam

Scarce numbers prompt HRD Ministry to make suggestion

Prakash Kumar

NEW DELHI: Girls preparing for the joint entrance examination to be held in June for admissions to undergraduate programmes of the Indian Institutes of Technology may get some relaxation in qualifying marks. If the suggestion is accepted by the Joint Admission Board.

"We have suggested the IIT's joint admission board to consider giving girl candidates some relaxation in qualifying marks during admission. But, the decision has to be taken by the board on this issue," a HRD Ministry official said.

The suggestion has been given to the board, which will conduct JEE-Advance for admissions to IITs in June this year,

keeping in view that very less number of girls make it to the IITs compared to boys, he added.

A total of 4.68 lakh candidates appeared in the last JEE. Of these, 13,602 candidates cleared the entrance examination. The number of successful girls in the test stood at just 1,491 girls, nearly 11 per cent of total number of successful candidates.

The girls have already been exempted from paying fees for appearing in JEE-Advance in

an effort to encourage their participation in the IITs, the Ministry official said.

The JEE, to be conducted in two parts—JEE Main and JEE Advance for mainly admissions to the Centrally-funded technical institutes including IITs and National Institutes of Technology—is scheduled to be held on April 7 and June 2 this year.

For those seeking to appear online in paper I of the JEE-Main, the test will be conducted on April 8 and April 25. The JEE-Main will be conducted by

the Central Board of Secondary Education (CBSE) for admissions to the technical institutes other than IITs.

Only top 20 percentile holders in their respective class XII board examinations will be eligible for taking JEE Advance. The joint admission board of IITs will screen about 1.50 lakh students for the test on the basis of their performance in the JEE Main.

Students belonging to scheduled castes, scheduled tribes and other backward classes will

be screened for the JEE-Advance on the basis of quota applicable to them. Indian School of Mines, Dhanbad, will also give admissions to students on the basis of their performance in JEE-Advance.

Many deemed-to-be universities and the governments of Gujarat, Haryana and Uttarakhand have agreed to use the test scores for admissions to their engineering colleges functioning in their respective jurisdictions from this year.

DH News Service

Hindustan ND 09/01/2013 p-15

प्रतिभाशाली नौजवानों को शोध के लिए किया जा रहा प्रेरित

आईआईटी से पीएचडी कर सकेंगे इंजीनियर

नई दिल्ली | मदन जैड़ा

आईआईटी या बेहतरीन इंजीनियरिंग संस्थानों से इंजीनियरिंग की डिग्री लेने वाले नौजवान कॉरपोरेट क्षेत्र से मोटा पैकेज मिलने पर नौकरी को तरजीह देते हैं। इसलिए ज्यादातर नौजवान एमटेक या पीएचडी नहीं करते हैं। अब ऐसे प्रतिभाशाली इंजीनियरों को आईआईटी शोध के लिए लुभाएगा।

केंद्र सरकार ने निजी क्षेत्र में सेवारत प्रतिभाशाली इंजीनियरों को पीएचडी के लिए आकर्षित करने की नई योजना शुरू करने का फैसला किया है। इन्हें नौकरी करते हुए देश के 16 चुनिंदा आईआईटी में पीएचडी करने का मौका मिलेगा। सरकार की कोशिश है कि बेहतरीन फैकल्टी तैयार की जाए और इंजीनियरिंग में पीएचडी को बढ़ावा दिया जाए।

केंद्रीय मानव संसाधन विकास मंत्री पल्लम राजू ने सोमवार को आईआईटी

चीन से काफी पीछे हैं हम

● देश में इंजीनियरिंग में चार हजार पीएचडी (तीन हजार आईआईटी और बाकी अन्य संस्थानों से) होती हैं जबकि चीन में यह आंकड़ा करीब 15 हजार है ● भारत में दुनिया में सबसे ज्यादा इंजीनियर तैयार होते

काउंसिल की बैठक के दौरान कई अन्य प्रस्तावों के साथ इंजीनियरिंग में पीएचडी की संख्या बढ़ाने के प्रस्ताव को भी मंजूरी प्रदान की थी। अब आईआईटी काउंसिल इस योजना पर अमल के तौर-तरीके तय करेगी। योजना के तहत उद्योगों, विभिन्न सेवा प्रदाता कंपनियों में कार्य कर रहे इंजीनियरों के अलावा निजी या सरकारी इंजीनियरिंग कॉलेजों में पढ़ा रहे शिक्षकों को भी शामिल किया गया है।

उन्हें भी आईआईटी से पीएचडी का मौका दिया जाएगा। लेकिन पीएचडी के लिए उन्हें न तो छुट्टी लेने की जरूरत

भारतीय प्रौद्योगिकी संस्थान है।
CHIAN INSTITUTE OF TECHNOLOGY
हैं। इंजीनियरिंग की 15 लाख सीटें हैं। पर बीटेक/बीई करने के बाद डेढ़ लाख ही एमटेक में प्रवेश लेते हैं

पड़ेगी और न ही आईआईटी जाकर पढ़ाई करनी होगी।

मंत्रालय के एक वरिष्ठ अधिकारी के अनुसार नेशनल नॉलेज नेटवर्क (एनकेएन) के जरिये उन्हें वह सामग्री दी जाएगी जो पीएचडी छात्रों को नियमित कक्षा में दी जाती है। एनकेएन के जरिये सभी 16 आईआईटी और विश्वविद्यालयों, इंजीनियरिंग कॉलेजों को पहले ही जोड़ा जा चुका है। यह एक ऐसा पोर्टल है जिस पर आईआईटी में दिए जा रहे लेक्चर और अन्य पाठ्य सामग्री को हासिल किया जा सकता है।

नई व्यवस्था जुलाई से होगी लागू, 30 एनआईटी हैं देश भर में फिलहाल

एनआईटी से सीधे आईआईटी में प्रवेश !

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देश के राष्ट्रीय तकनीकी संस्थानों (एनआईटी) में पढ़ने वाले विद्यार्थी सीधे आईआईटी में प्रवेश ले सकेंगे। नई व्यवस्था जुलाई से लागू होगी। देश भर में फिलहाल 30 एनआईटी हैं।

सूत्रों के मुताबिक, नई व्यवस्था के तहत एनआईटी से बीई करने वाले विद्यार्थी को अंतिम वर्ष में (सातवें सेमेस्टर से) आईआईटी में सीधे प्रवेश दिया जाएगा। मैरिट के आधार पर यह व्यवस्था रखी गई है। लेटरल एंट्री देने के पीछे मुख्य वजह रिसर्च को बढ़ावा देना है। आईआईटी में प्रवेश उन्हीं छात्रों को मिलेगा, जिनका

बीते तीन साल प्रदर्शन अच्छा रहा। इसके पीछे उद्देश्य यह है कि एनआईटी के बेहतरीन विद्यार्थी अंतिम वर्ष आईआईटी से करें, साथ ही इसके बाद पीएचडी भी करें।

ब्रांच नहीं बदलेगी

खास बात है कि छठवें सेमेस्टर के बाद सातवें सेमेस्टर में आईआईटी में प्रवेश मिलने पर छात्र की ब्रांच नहीं बदलेगी। उसे उसी ब्रांच में एडमिशन मिलेगा जिसमें वह एनआईटी में पढ़ रहा है। प्रवेश के लिए विद्यार्थी को आवेदन करना होगा। उसके बाद अंकों के आधार पर विद्यार्थियों को प्राथमिकता दी जाएगी। पढ़ें एनआईटी @ पेज 09

देशभर में 12 वीं का पेपर एक समान!

नई दिल्ली. देश के सभी बोर्डों द्वारा आगामी वर्ष से 12 वीं की विज्ञान-गणित परीक्षा में समान प्रश्नपत्र के आधार पर परीक्षा आयोजित किए जाने की संभावना है। 12वीं परीक्षा के अंकों की अब आइआईटी जैसी प्रवेश परीक्षाओं में महत्वपूर्ण भूमिका है और समान प्रश्न-पत्र की कवायद के बाद छात्रों को यह शिकायत नहीं रहेगी कि उनके बोर्ड का डिफिकल्टी लेवल दूसरे बोर्ड से ज्यादा रहा है।

पढ़ें देशभर में @ पेज 09

आईआईटी की पढ़ाई और महंगी

नई दिल्ली. इस साल से भारतीय प्रौद्योगिकी संस्थानों में सामान्य वर्ग के छात्रों को अधिक फीस चुकानी होगी। आईआईटी परिषद ने 2013 से स्नातक छात्रों की ट्यूशन फीस को 50 हजार रु. से 90 हजार रु. प्रति वर्ष करने को मंजूरी प्रदान कर दी है। हालांकि अनुसूचित जाति और अनुसूचित जनजाति वर्ग के छात्रों के लिए किसी भी तरह फीस में बढ़ोतरी नहीं की है। यह फैसला सोमवार को हुई परिषद की बैठक में किया गया।

विस्तृत खबर पेज-10

आउटर रिंग रोड को जाम से बचाने की तैयारी

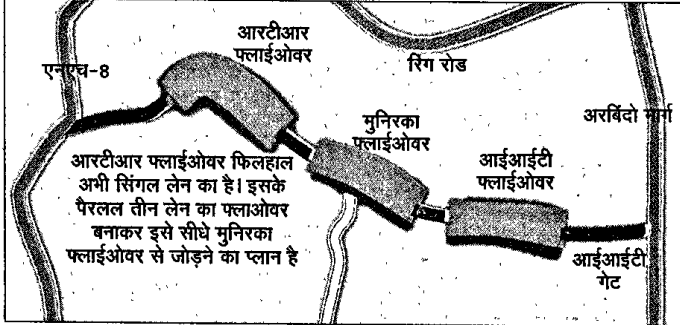
आईआईटी गेट से एनएच-8 पर राइट्स ने तैयार किए लॉन्ग व मीडियम टर्म प्लान

प्रमुख संवाददाता ॥ नई दिल्ली

आईआईटी गेट से नेशनल हाईवे-8 तक के आउटर रिंग रोड को जाम से मुक्ति दिलाने के लिए राइट्स ने लॉन्ग टर्म व मीडियम टर्म प्लान तैयार किया है। राइट्स की स्टडी के मुताबिक राव तुलायव मार्ग पर 3 लेन का डेडिकेटेड कॉरिडोर बनाया जाए, साथ ही राव तुलायव मार्ग के साथ-साथ तीन लेन का फ्लाई ओवर भी बनाया जाए। राइट्स ने अपनी यह रिपोर्ट पीडब्ल्यूडी को सौंप दी है। रिपोर्ट को गुरुवार को होने वाली यूनीफाइड, ट्रैफिक एंड ट्रांसपोर्टेशन इन्फ्रास्ट्रक्चर (प्लानिंग एंड इंजीनियरिंग) (यूटीपैक) की बैठक में मंजूरी के लिए लाया जाएगा।

क्या है दिक्कत ?

आईआईटी गेट से एनएच-8 तक करीब 8 किलोमीटर के दायरे में 3 फ्लाई ओवर बनाए गए हैं, इनमें एक आईआईटी गेट, एक मुनिरका व एक राव तुलायव मार्ग पर बनाया गया है। लेकिन आरटीआर पर एक और फ्लाई ओवर होने के कारण इस रोड से गुजरने वाले लोगों को भारी ट्रैफिक जाम का सामना करना



पड़ता है। इस आउटर रिंग रोड को जाम से मुक्ति दिलाने के लिए पीडब्ल्यूडी ने राइट्स को हल निकालने व स्टडी करने का जिम्मा दिया। राइट्स ने अब अपनी रिपोर्ट पीडब्ल्यूडी को दे दी है। रिपोर्ट में लॉन्ग टर्म व मीडियम टर्म सुझाव दिए गए हैं।

3 लेन का फ्लाईओवर

राइट्स की स्टडी के मुताबिक फ्लाई ओवर के नीचे 3 लेन की रोड व 3 लेन का फ्लाई ओवर बनाने के लिए वसंत विहार लेन की स्टडी लेने की जरूरत है। स्टडी के मुताबिक

इस कॉरिडोर और फ्लाई ओवर को सीधे मुनिरका फ्लाई ओवर से जोड़ा जाए ताकि लोग सीधे इस फ्लाई ओवर पर चढ़कर एनएच-8 पर पहुँच सकें। मलाई मंदिर के निकट के चट्टान को भी थोड़ा कट करने की जरूरत है। लेकिन वसंत विहार लेन के लोग लगातार इसका विरोध कर रहे हैं। दिल्ली के लोक निर्माण मंत्री राजकुमार चौहान का कहना है कि लोगों को जाम की समस्या से निजात दिलाने के लिए इस सिंगल फ्लाई ओवर को डबल करने की जरूरत है। यूटीपैक से मंजूरी मिलते ही इस प्रस्ताव को दिल्ली अर्बन आर्ट्स

प्रस्ताव में 20 किलोमीटर एरिया में 8 मेट्रो स्टेशन बनाने की प्लानिंग है। इससे 2021 में 2.65 लाख यात्रियों को व 2031 में 3.42 लाख यात्रियों को फायदा होगा। इसके साथ ही यहां 4 बीआरटी कॉरिडोर आईजीआई एयरपोर्ट, महरोली धौला कुआं व वसंत विहार से होकर गुजरेंगे। यह बीआरटी कॉरिडोर 28 किलोमीटर के एरिया को कवर करेंगे। आउटर रिंग रोड से जाम को कम करने के लिए महरोली-महिपालपुर के बीच अल्टरनेटिव बाइपास बनाने की प्लानिंग भी है।

कमीशन को भेज दिया जाएगा।

किन्हें मिलेगा फायदा ?

इस प्लान से सफदरजंग, वसंत कुंज, जिया सयय, ग्रीन पार्क, होज खास, आरकेपुरम, आईआईटी, वसंत विहार, जेएनयू और डीयू के साउथ कैम्पस के आसपास के एरिया के लोगों को फायदा होगा।

और भी हैं प्लानिंग

इसके अलावा लॉन्ग टर्म सुझावों में मेट्रो फेज-3 व 4 के प्रस्ताव में 20 किलोमीटर एरिया में 8 मेट्रो स्टेशन बनाने की प्लानिंग है। इससे 2021 में 2.65 लाख यात्रियों को व 2031 में 3.42 लाख यात्रियों को फायदा होगा। इसके साथ ही यहां 4 बीआरटी कॉरिडोर आईजीआई एयरपोर्ट, महरोली धौला कुआं व वसंत विहार से होकर गुजरेंगे। यह बीआरटी कॉरिडोर 28 किलोमीटर के एरिया को कवर करेंगे। आउटर रिंग रोड से जाम को कम करने के लिए महरोली-महिपालपुर के बीच अल्टरनेटिव बाइपास बनाने की प्लानिंग भी है।

दूर की सोच

आरटीआर फ्लाई ओवर के पैरलल 3 लेन व नीचे सड़क भी 3 लेन बनाए जाने का सुझाव

3 लेन के फ्लाई ओवर को मौजूदा मुनिरका फ्लाई ओवर से जोड़ने का प्लान

सड़क को चौड़ा करने के लिए वसंत विहार लेन को भी लेने का सुझाव

मेट्रो फेज-3 व 4 के प्रस्ताव में 20 किलोमीटर एरिया के 8 स्टेशन बनाने की प्लानिंग

4 बीआरटी कॉरिडोर आईजीआई एयरपोर्ट, महरोली धौला कुआं व वसंत विहार से गुजरेंगे

महरोली-महिपालपुर के बीच अल्टरनेटिव बाइपास बनाने की प्लानिंग

यह प्रस्ताव गुरुवार को यूटीपैक की मीटिंग में जाएगा

Hindustan Times ND 9/01/2013 P10

Indian scientist first to record 'birth cry' of black hole

Joydeep Thakur

■ letters@hindustantimes.com

KOLKATA: For the first time, scientists have detected the entire 'birth cry' of a black hole — a region in space that gulps down everything including light — located nearly two billion light years away from Earth.

Just like a baby, who cries after taking birth, a black hole, which forms when a sun or a star collapses, emits huge amounts of gamma radiation just after its formation. This is said to be a black hole's 'birth cry'.

Indian scientist Sandip Kumar Chakrabarti and Italian scientist Remo Ruffin recorded the entire process of birth lasting 50 seconds after analysing data from Russian satellite Koronas Foton. The satellite had detected the gamma radiation in June 2009.

Their findings, which surfaced in October last year, have been reported in scien-

UNVEILING MYSTRY

WHAT IS A BLACK HOLE A region in space which gulps down everything including matter and light because of its gravity which is several billion times greater than the earth's gravitational pull

HOW DO THEY FORM Black holes form from stars when they collapse from their own gravity to form an object whose density is infinite and when the nuclear fuel gets exhausted

tific journals in the US and Europe.

"Earlier, scientists had recorded such birth cries, but none was complete. While some were contaminated with loud noises, others had only portions of the process lasting around two-three seconds. But we detected the entire cry," Chakrabarti, head of the department of astrophysics

and cosmology at SN Bose National Centre for Basic Sciences in Kolkata, said on Tuesday.

Chakrabarti said since the black hole — named GRB090618 — was nearly two billion light years (one light year is the distance travelled by light in one year) away, it was formed nearly two billion years ago. "The signals reached us only recently."

The nearest black hole from Earth is the centre of our Milky Way galaxy, 30,000-40,000 light years away.

"The energy released by GRB090618 in one second is equal to the energy released by the sun till date since the day it was formed nearly 4.6 billion years ago. We are lucky that it didn't form somewhere close to our solar system, otherwise the entire earth would have been wiped out within a fraction of a second," Chakrabarti said.

Milky way has 461 new earth-sized planets

Reuters

Cape Canaveral, Florida, Jan. 8
NASA's Kepler space telescope has uncovered another 461 potential new planets, most of which are the size of Earth or a few times larger, scientists said on Monday.

The announcement brings Kepler's head count to 2,740 candidate new worlds, 105 of which have been confirmed.

"Two years ago we had around 1,200 candidate planet objects. A year later, we added a significant number of new objects and saw the trend of huge numbers of very small planets ... twice the size of Earth and smaller," Kepler astronomer Christopher Burke told a news conference Webcast from the American Astronomical Society conference in Long Beach, California.

With the addition of 461 new candidate planets, collected over 22 months of Kepler telescope observations, the proliferation of smaller planets continues.

The new targets include what appears to be a planet about 1.5 times bigger than Earth circling its sun-like parent star in a 242-day orbit - a distance where liquid water, believed to be necessary for life, could exist on its surface.

In related research, astronomers have determined that about one in six sun-like stars have Earth-sized planets circling their parent stars closer than Mercury's 88-day orbit around the sun.

The goal of the Kepler mission, which began in 2009, is to determine how many stars in the Milky Way galaxy have an Earth-sized planet orbiting in

so-called habitable zones, where water can exist on its surface.

"You need very specific conditions to have liquid water. You can't have your planet too close to your star where it's too hot. You can't have it too far away for the planet conditions to be too cold. We're trying to find these planets in this very specific habitable zone," said Burke, who is with the SETI Institute in Mountain View, California.

The Kepler telescope works by tracking slight decreases in the amount of light coming from 160,000 target stars caused by a planet or planets passing by, or transiting, relative to the telescope's point of view.

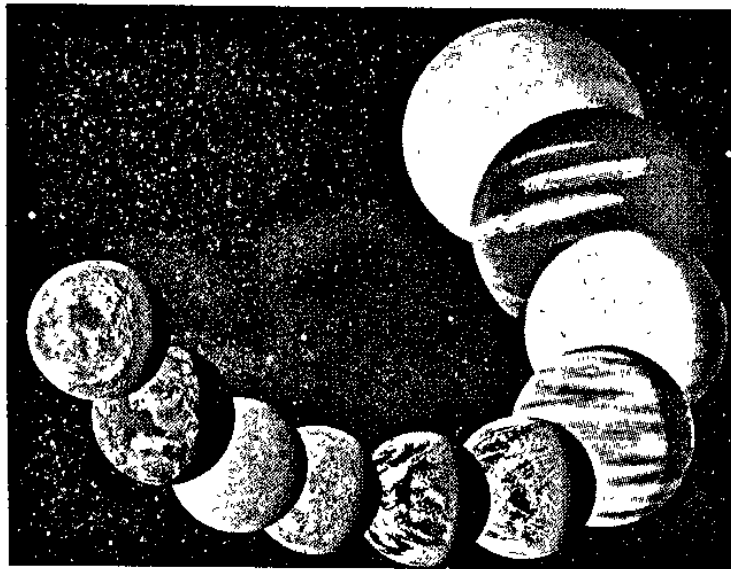
Earth-sized planets located about where Earth orbits the sun would take 365 days to circle

their parent star. Those located closer, in Mercury-like 88-day orbits, transit more frequently.

Scientists need at least two and preferably three or more cycles to determine whether an apparent transit is real or some other phenomena.

"In order to catch several transits of an Earth analog, you have to wait for one more year to get another transit. It's simply too early to call," said astronomer Francois Fressin, with the Harvard-Smithsonian Center for Astrophysics.

The Kepler roster also boosts the number of multi-planet systems. Of the 2,740 objects, 299 are in dual-planet systems, 112 are in triplets, 44 are part of four-planet systems, 11 systems have five planets and one system has six planets.



An artist's rendering released on Monday by Harvard-Smithsonian Center for Astrophysics shows the different types of planets in our Milky Way galaxy detected by NASA's Kepler spacecraft. A new analysis of Kepler data found there are at least 17 billion planets the size of Earth. — AP

‘₹94k/yr spent on educating a child’

Fee Hikes Eating Into Household Budget

Himanshi Dhawan | TNN

New Delhi: While the cost of private education has always been prohibitive, education in government-run institutions has also increased sharply in the last one month with the HRD ministry taking the decision to hike under-graduate fees in IITs by 80%.

Earlier, the fees for Kendriya Vidyalaya students increased three-fold from Rs 4,500 to Rs 12,000 annually. The Kendriya Vidyalaya fee hike impacts 11 lakh students in 1,090 schools. The last fee hike in both cases took place in 2008-09, and has been long overdue.

The decision to hike fees for undergraduate courses from Rs 50,000 to Rs 90,000 annually was taken on Monday at the meeting of the IIT Council. In the case of IIT, the student fees include only 30% of the total operational cost of the institute and comes at a time when the premier tech institutes are working to become self-sufficient.

The mounting cost of education in recent years has eaten into a major part of the household budget. An ASSOCHAM survey showed that 65% of parents spend more than half their take-home pay on their children's education, extra co-curricular activities placing significant burden on their family budget.

According to the survey, parents spending on a single child's education has gone up from Rs 35,000 in 2005 to over Rs 94,000 in 2011 on such items and activities

IIMs also become more expensive

After the IITs, premier B-schools are now hiking their fees. If you're planning to join the IIM-Ahmedabad be ready to shell out more than you'd budgeted for. The country's top B-school has become costlier once again. With a total fee of Rs 16.6 lakh, the institute now leads the fee front. The increase will be applicable for the 2013-15 batch. The total intake will remain the same as last year (385). The fee for Post-Graduate Programme students of the 2012-2014 batch of IIM-A for their first academic year was approximately Rs 7.4 lakh. IIM-A, in 2008, announced a nearly six-time increase in fee, from Rs 2 lakh to Rs 11.5 lakh for its flagship two-year PGP course in management. The fee was increased in the next two years to Rs 15.5 lakh for the 2012-14 batch.

Next to follow IIM-A is IIM-Raipur. Although it's a marginal increase, the fee structure here is Rs 9.6 lakh compared to Rs 9 lakh last year (a hike of Rs 60,000). The IIMs which haven't yet decided on a fee hike include IIM Kozhikode and IIM Calcutta, which charged Rs 10 lakh for 2012-14. IIM-Bangalore, which increased the fee last year to Rs 13 lakh will take a decision next week. IIMs which have stayed with last year's fee structure include IIM Kashipur, IIM Lucknow and IIM Rohtak. TNN

as integral to the school curriculum like fees, transport books, uniform, stationery, building fund, educational trips, extra tuitions and extra-curricular activities.

The survey highlights that the rising cost of education, has become a major cause of worry for parents. Majority of parents spend on average more than Rs 18 lakh-20 lakh in raising a child by the time their teen graduates from high school.

According to government data, average private expenditure on secondary education in private schools is as high as Rs 893 per month as compared to only Rs 275 per month in government schools primarily due to difference in high tuition fees in private institutions.

Aggregate public spend-

ing on education during the 11th Plan period is estimated at Rs1244,797 crore for both the Centre and states taken together. About 43% of the public expenditure on education was incurred for elementary education, 25% for secondary education and the balance 32% for higher education.

About half of the Central government's expenditure was incurred for higher education and the remaining for elementary (39%) and secondary (12%) education. In the state sector, about 75% of education expenditure is for school education, of which 44% is on elementary education and 30% on secondary education.

Public expenditure on secondary education has increased from 0.78% in 2007-2008 to 1.05% in 2011-2012.

Mock Mars trek discovery: Down-to-Earth sleep woes

Associated Press
Washington, Jan. 8

Astronauts have a down-to-Earth problem that could be even worse on a long trip to Mars — They cannot get enough sleep. And over time, the lack of slumber can turn intrepid space travellers into drowsy couch potatoes, a new study shows.

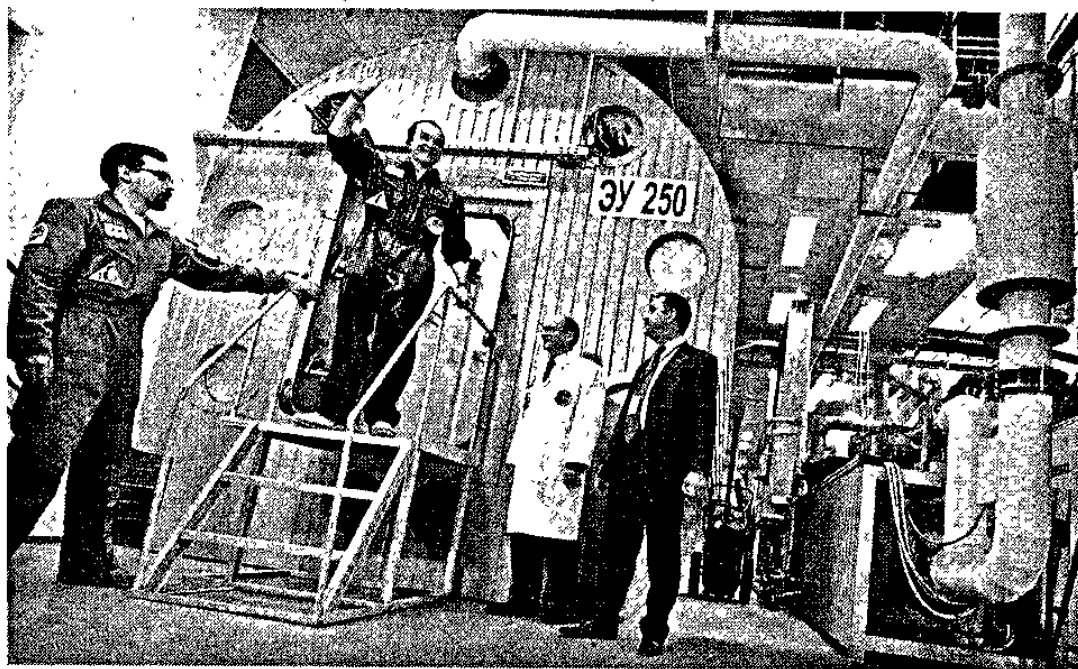
In a novel experiment, six volunteers were confined in a cramped mock spaceship in Moscow to simulate a 17-month voyage. It made most of the would-be spacemen lethargic, much like birds and bears heading into winter, gearing up for hibernation.

The men went into a prolonged funk. Four had considerable trouble sleeping, with one having minor problems and the sixth mostly unaffected. Some had depression issues. Sometimes, a few of the men squirreled themselves away into the most private nooks they could find. They didn't move much. They avoided crucial exercise.

"This looks like something you see in birds in the winter," said lead author David Dinges, a sleep expert at the University of Pennsylvania School of Medicine.

The experiment was run and funded by Russian and European space agencies. A report on the simulation's effect on the men was published online on Monday in the journal *Proceedings of the National Academy of Sciences*.

Dinges said scientists cannot tell if the men's lethargy was just lack of sleep or was also



Mars on Earth: A November 2011 photo released by Moscow's Institute for Medical and Biological Problems Russia, shows researchers Sukhrob Kamolov leaving a set of windowless modules after a gruelling 520-day simulation of a flight to Mars.7 — AP

caused by other factors — the close quarters, lack of privacy with so many cameras or being away from their families for so long.

It's a problem that has to be fixed and can be before astronauts are sent to Mars, as President Barack Obama proposes for the mid-2030s, Dinges said. The trip to Mars, Earth's closest neighbour, would take about six months each way.

American astronaut Scott Kelly and Russian cosmonaut Mikhail Kornienko are scheduled to spend an entire year in space on the International Space Station, starting in 2015.

When leaving confinement in

November 2011, the six volunteers three Russians, a Frenchman, an Italian-Colombian and a Chinese called their experience successful. The data scientists collected was not as rosy. Devices on the volunteers' wrists measured their movements and showed that when they were asleep and awake they were moving much less than they should have been, an unexpected and disturbing finding, Dinges said.

One of the six volunteers who were paid \$100,000 to live in the mock spaceship with limited and time-delayed contact with the outside world slept nearly half an hour less each night than

he did when he started the mission, affecting how he went about his day, Dinges said.

The loss of sleep matters because astronauts will have to perform intricate tasks on the way to Mars and while on the red planet. And they have to do vigorous exercises daily to fight the toll that near-zero gravity takes on the bones and other parts of the body. And most of the volunteers weren't doing that.

The Moscow study, based on the ground, could not take into account the added difficulty of near-zero gravity.

Astronauts do use sleeping pills to help them sleep.