आईआईटी कराएगा शॉर्ट टर्म कोर्स

नई दिल्ली | शोहित पवार
आईआईटी दिल्ली अब 12वीं पास छात्रों को बिना जेईई परीक्षा लिए शॉर्ट टर्म कोर्स करवाएगी। हालांकि छह माह के इन कोर्सों के लिए आईआईटी एक प्रवेश परीक्षा लेगी, इंटरव्यू के बाद पास हुए छात्रों को दाखिला मिलेगा। इसके तहत बीटेक के नौ विषयों के फाउंडेशन कोर्स करवाए जाएंगे। छात्रों को संबंधित कोर्स के सर्टिफिकेट भी दिए जाएंगे।

दाखिला कमेटी के अधिकारियों के अनुसार ऐसी परीक्षा देने वाले छात्रों के 12वीं में 75 फीसदी अंक होना जरूरी है। इन कोर्स की शुरुआत नए सत्र से की जाएगी। जेईई में और एडवास की परीक्षा की तुलना में दाखिले के लिए यह परीक्षा बेहद अलग और सामान्य होगी। परीक्षा के लिए 75% अंक और इंटरव्यू के लिए 25 फीसदी अंक मिलेंगे। सभी कोर्सों में 60-60 सीटें होंगी। जेईई परीक्षा पास न करने वाले छात्र भी यह कोर्स कर सकते हैं।

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<td>बीटेक के कुल नौ कोर्स हैं। इनमें बीटेक कमिकल, सिरिधि, कंप्यूटर साइंस, इलेक्ट्रिकल, इलेक्ट्रॉनिक पावर, इंजीनियरिंग फिजिक्स, मेकनिकल, प्रोडक्शन एंड इंडस्ट्रियल इंजीनियरिंग और टेक्स्टूअल टेक्नोलॉजी है।</td>
<td>आईआईटी अब छात्रों को हिंदी-अंग्रेजी साहित्य और सामाजिक विज्ञान जैसे कुल 12 विषय पढ़ने की तैयारी में है। ये एड ऑन कोर्स हैं। इन्हें स्नातक के सभी कोर्स में शामिल किया जाएगा। ये कोर्स वैकल्पिक होंगे।</td>
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Hindustan ND 18/04/2014 P-1
IIT-Delhi to throw open its doors on Saturday

Vijetha S. N.

The Hindu A volunteer displays the True Hb Hemometer at IIT-Delhi’s ‘Open House’. Photo: Meeta Ahlawat

**Special attention to design, socially relevant, commercially viable projects this year**

Ever wondered what the insides of a laboratory at the Indian Institute of Technology-Delhi looks like? How about wanting to see a robotics show or perhaps witness a mini quadcopter take to the skies? You’re in luck, for IIT-Delhi’s traditional “Open House”, where it throws open its doors to the good citizens of the city, is happening this Saturday.

“Almost all our laboratories, departments and research will be open to the public on this day. Along with over 500 projects that showcase innovations in engineering and technology, science and humanities, design and management,” said Prof. Joby Joseph, who is the “Open House” chairperson this year.

“This time, we have given special attention to design, and socially relevant and commercially viable projects,” he added.

“A lot of students have already confirmed their presence as we have some talks lined up along with the actual exhibition. Schoolchildren never fail to astound us with their questions,” said Dean of Research and Development Prof. Suneet Tuli, while revealing that their research funding had reached around Rs.106 crore this year.
A few of innovations that are socially relevant include the True Hb Hemometer that allows you to test your haemoglobin levels with just one drop of blood and gives you the results within seconds. And the best part? It’s very cheap and small, and can withstand higher temperatures.

“The current practice is to send your collected blood sample to a pathology lab and wait for results overnight. Devices available in the market need temperatures below 20 degrees Celsius and cost about Rs.20,000 compared to ours, which costs about Rs.7,000,” said Ambar Srivastava, a student of Dr. Veena Koul, who has invented this device.

Another quick and easy medical testing device is the “Lipoprotien Analysis”, which can check your “cholesterol levels at the cost of a burger”.

Prof. A.S. Rathore explained that 73 per cent of Indians are overweight, with the average person becoming obese at the age of 38. What is worse is that the majority belong to the middle-class or poor households and are forced to shell out Rs.5,000 for a cholesterol analysis. “Our machine can do a test for Rs.120, the exact cost of a burger with a slice of cheese,” he said.

Ways in which information technology can be used for better implementation of government schemes, toys that can be made from trash and making plastic from potato starch are some of the other exhibits on display.
Girl found with serious injury marks under IIT-D flyover

OUR CORRESPONDENT

NEW DELHI: An auto-rickshaw driver, on Wednesday night, discovered a 19-year-old girl sitting near IIT-Delhi flyover under mysterious circumstances. He informed the police, who then admitted her to the AIIMS trauma center.

The driver told the police that while he was driving back home, he saw a girl sitting in a dark place. She seemed unwell and in an act of deep concern, he stopped his auto-rickshaw near her and asked whether she wanted help from him. Without answering him, she sat in the auto and told him that she was not feeling well, a police official said, quoting the driver’s statement.

Her clothes were bit torn and her body parts bore injury marks as well. Smelling a rat, the auto-driver whose identity was not disclosed, made a call to the police control room. A team reached the spot and the driver handed over the unidentified girl to the police. She was immediately rushed to AIIMS Trauma Center, as her condition was poor.

Meanwhile after recording the driver’s statement, he was released. The victim was provided with medical aide and on Thursday morning her condition was said to be stable. When a team approached the victim to ascertain what had happened to her and how she managed to reach such an isolated place, she was unable to explain the exact sequence of event, a police official said.

She told police that she hails from a village in Gujarat and a team has been sent there to contact the family. On Thursday morning, she allegedly told police that she was kidnapped and brought by unidentified men in a train. However, in the afternoon she changed her statement and narrated another story. However, despite injury marks on her body, Delhi police has ruled out any possibility of rape.

However, despite injury marks on her body, Delhi police has ruled out any possibility of rape, with medical reports confirming the same.
Future wars would be non contact wars: DRDO chief

PBD BUREAU/PTI
CHENNAI, APRIL 17

As future combats are predicted to be ‘non contact wars’, India was focussing on developing robotics, underwater vehicles and unmanned systems, a top defence official said here today.

“Tomorrow’s wars are going to be non contact wars.. We are focussing on unmanned systems and robotics. Autonomy levels have to change. After having achieved some skills in Earth’s surface, we are focussing on underwater vehicles,” DRDO Director General Avinash Chander said.

DRDO had done sufficiently in radars segment that 80 per cent of radar equipment required for the armed forces was provided by the organisation, he said in a speech at the 55th Institute Day of IIT Madras here.

Scientific and academic institutions must focus on innovation and not on repeating experiments and reproduce products, said Chander, who is also the Scientific Advisor to the Defence Minister and Defence Secretary (R&D).

“We have been excellent survivors. India has been surviving in technology. From catching up with technology, India should be a leader in technology,” he said.
BUZZING WITH IDEAS

widely regarded as deliverers of deadly weapons or as snooping aids, unmanned aerial vehicles are finding applications in sectors as varied as agriculture, realty and film-making, discover Krithika Krishnamurthy and Malavika Murali

Cool Indian Startups

AIRPIX
Does not sell drones, but does aerial photography. Gives recommendations to industries and businesses by carrying out data analytics on aerial data collected by the drones for its customers including Kaipatani, APIM Terminals, K Raheja Corp, Reliance Energy.

GURU ROBOTICS
Sells software and services for the UAV industry.

EDALL SYSTEMS
Helps enthusiasts build UAVs. Develops software for the drone industry.

IDEAPROG
Has developed Netra UAV in collaboration with the forces of three states along with Central Reserve Police Force (CRPF), and the Uttar Pradesh Special Task Force are its customers.

AURORA INTEGRATED SYSTEMS
One of the early entrants in the field, the Bangalore-based company counts DODO and the Indian Army as its clients.

Applications

Package delivery, surveillance to track sand and mining mafia, garbage collection and water pollution monitoring, wildlife protection, 3D mapping, for movie shooting, pollution monitoring, meteorology, traffic management.

Types of UAVs

MICRO UAVS
- Weighs up to 1 kg.
- Can fly for up to 60 minutes.

SMALL UAVS
- Weighs up to 15 kg.
- Can fly for more than 2 hours.

MEDIUM UAVS
- They fly up to 4,000 ft for 40 minutes with payload of 5-10 kg.

LARGE UAVS
- General Atomic MQ-1 Predator.
- Can fly up to 14,000 ft with 1,000 lb of payload.

Around the World...

UK
A new drone called Snappy was unveiled in March. It scans trees without the knowledge of the user by scouting for a wireless signal in a smartphone.

CHINA
Deployed drones to spy on polluting industries in March 2014.

AUSTRALIA
Cockatoo, an Australian textbook rental startup had decided to use drones to deliver textbooks last year, marking this as the first commercial application of the unmanned aerial vehicle worldwide.

BRAZIL
To patrol the skies and perform surveillance above the football stadiums during the course of FIFA World Cup. Brazil has bought two drones from Israel.

DUBAI
The UAE government said it plans to utilize drones, equipped with eye-recognition and fingerprint hardware, to deliver government materials, official documents in 2014.

I N K Mohan has his way, the price of tomatoes in Indian markets will fall as dramatically as they do. The 60-year-old wants to achieve this not by way of price regulation, but with a tiny help from technology.

At the Indian Institute of Science in Bangalore, Ramam along with a team of researchers has built a miniature remote-controlled vehicle that can hover above fields and gather data that helps monitor the crop's growth. The devices estimate the size and estimate the size and quality of the tomato crop.

The unmanned aerial vehicle, or drone as it is popularly known, was used to collect data at tomato farms in Karnataka's Kolara district for three months throughout the field.

“The farmers were enthused by our technology,” said Ramam, who is also a senior manager at Infosys and renowned for his work in technology and communication.

"In future we want to distribute information about what is going on and where so that the farmers could decide which variety to grow."

The team, which operates out of a small lab within the school, has built a variety of vehicles and drones using different types of materials.

Hypersonic Flight

Hypersonic flight involves speeds between seven and 10 times the speed of sound.

The government has been working on developing a hypersonic vehicle that could reach speeds of up to 3,500 km per hour.

This is because hypersonic vehicles are potential weapons of the future and are capable of carrying nuclear warheads.

Ten years ago, it was difficult to find people who could even operate them. Now, we see lots of them who design and fly the vehicles themselves.

"The vehicle itself is designed to be simple to operate and maintain," said Omkar, chief researcher at the Department of Aerospace Engineering, who is overseeing Ramam's work. It will use the drone, which costs around $3,200 and can fly for about two months, to fly the detection device, he said.

"It is a 40-km flight from the plant to the detection device that is being analyzed by the team to estimate this season's yield. From being machinists to being useful for survival and point and shoot operations, drones are now widely accepted as a hobby tool for commercial use.

In the past, at least half of the showrooms of other drone technologies have been hit. The team has trained some 150 people from across the country in drone operations.

"Instead of chaos in towers, a UAV can do the job just like smart traffic and energy sunday," said Nagendra Saraf, defence expert at research firm Markets India Group.

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Magnetic nanovoyagers in human blood

http://www.nanowerk.com/spotlight/spotid=35255.php

(Nanowerk Spotlight) The use of nanomotors to power nanomachines and nanofactories is one of the most exciting challenges facing nanotechnology. The highly successful design shop of Mother Nature has created efficient biomotors through millions of years of evolution and uses them in numerous biological processes and cellular activities.

While nanotechnology researchers have made great progress over the past few years in developing self-propelled nano objects, these tiny devices still fall far short of what their natural counterparts' performance. Today, artificial nanomotors lack the sophisticated functionality of biomotors and are limited to a very narrow range of environments and fuels.

In another step towards realizing Richard Feynman's vision of tiny vessels roaming around in human blood vessels working as surgical nanorobots, researchers at the Indian Institute of Science (IISc) in Bangalore have now demonstrated, for the first time, externally driven nanomotors that move in undiluted human blood.

"Most externally – magnetically or acoustically – driven nanomotors realized to date have been actuated in de-ionized water and, in a few cases, in media of biological relevance such as serum," Pooyath Lekshmy Venugopalan a PhD student at IISc Bangalore's Centre for Nano Science and Engineering, tells Nanowerk. "The only reported attempt to maneuver a nano-voyager in human blood has been with catalytic microjets, which were moved in human blood diluted 10 times with (toxic) hydrogen peroxide."

In their paper in a recent edition of Nano Letters ("Conformal Cytocompatible Ferrite Coatings Facilitate the Realization of a Nanovoyager in Human Blood"), first-authored by Lekshmy, the IISc team describes a system of cytocompatible nanopropellers that can be maneuvered in various biological fluids with a small and homogeneous rotating magnetic field. The method of actuation is noninvasive, does not require any chemical fuel, and is therefore ideally suited for in vivo applications.
"For artificial nanomotors to be successfully maneuvered in undiluted human blood, two important experimental challenges need to be met," explains Lekshmy: "1) The thrust generated by the propeller needs to be large enough to overcome the large drag due to the presence of blood cells; and 2) since the large concentration of ions – chlorides, phosphates, etc. – in blood can etch most magnetic materials easily, this necessitates a conformal protective coating around the nanomotor, many of which, including the chemically and acoustically powered ones, contain a magnetic material which can be used for controlling their direction of motion."

The researchers overcame these experimental hurdles by using a conformal ferrite coating in conjunction with helical propulsion powered by magnetic fields.

The developed system was also found to be biocompatible, thereby opening up new possibilities in the in vivo applicability of artificial nanomotors, which was the team's main goal when they started this project.

Having controlled motion in important biological environments automatically suggests a general platform towards diagnostic and therapeutic applications. Since it is possible to functionalize the nanomotors with appropriate biomolecules, such a system could be used to detect and treat diseases.

"One could also envision bringing the nanomotors in close proximity to a cancerous tissue," notes Lekshmy. "This could have tremendous therapeutic implications, as ferrites – which coat our nanomotors – are commonly used for magnetic hyperthermia. Alternately, by loading the nanomotors with cancer specific drugs, one could localize the treatment
significantly."

The team's further research in this area will be directed towards adding functionality to their ferrite-coated nanopropellers, such as using them as sensors for detecting various disease conditions in blood, and to attempt therapeutic applications under in vivo conditions.

"For in vivo experiments, it may be necessary to image these small objects from a distance," Lekshmy points out. "This is not a trivial task and may require novel imaging methods."

By Michael Berger. Copyright © Nanowerk

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