Newspaper Clips

January 4, 2012

Hindustan Times ND 4/01/2012 P-1(Education)

LOOKING FORWARD TO 2012

ANTENNAS UP!

From a regulator for higher education to the foreign institutions bill, the education sector is set for major changes this year, says Rahat Bano

The road ahead: Students can hope for the creation of a meta university and a larger number of international institutions offering courses in India

THINKSTOCK

If all goes well, 2012 could be a landmark year for the education sector. Here's what students could look forward to.

Meta university: The proposed meta university will allow students to take courses across a network of institutions and disciplines, such as engineering with history. To begin with, the capital's four major institutes, each with different strengths, the University of Delhi, IIT - Delhi, Jawaharlal Nehru University (JNU), and Jamia Millia Islamia, are contemplating starting a four-year course in July 2012.

Single regulatory body for higher education: A single regulator for academic and research institutions, the National Commission for Higher Education and Research, might come into existence this year. The Higher Education and Research Bill, 2011, which proposes to set up the National Commission for Higher Education and Research (NCHER), was introduced in the Rajya Sabha on December 28, 2011.

In short, NCHER might result in more and better choices for learners. Set to replace various regulatory bodies, the creation of the commission could lead to standardised curricula, exam patterns and spur student mobility across universities in the country, say experts.

"The commission will facilitate determination, co-ordination, maintenance and continued enhancement of standards of higher education and research including university education, vocational, technical, professional and medical education other than agricultural education," says Vibha Puri Das, secretary - higher education, Union ministry for human resource development.

Saumen Chattopadhyay, associate professor of education, JNU, says, "Students will benefit from it in many ways. At present, students are a confused lot." They might have to do a lot of legwork to find out if the relevant approvals are in place for a correspondence course offered by a university. "There will be some kind of uniformity in curricula, exam pattern etc," says Chattopadhyay.

If NCHER fulfils its objectives, it could open up more avenues leading to quality education.

Given the commission's goals of assuring quality, Rahul Mullick, partner/executive director at PricewaterhouseCooper India, says, "Many new colleges and universities are set to come up in India and the key is to make them high quality institutions. For students, this would mean choices beyond the conventional institutes and more opportunities at good colleges instead of just the limited seats in the few leading colleges or institutes. Also one of the intended aims of NCHER is to standardise a national curriculum. This is expected to allow easier student migration from one college to another without impacting their course coverage." The aim of promoting innovation and research could stem the outflow of Indians to foreign shores to an extent. "Should NCHER be able to drive its focus on enhancing research capabilities as intended, this would mean that many students could seek research avenues in India itself instead of looking at overseas opportunities," says Mullick.

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MORE SEATS

Starting 2012, aspirants may see more places in higher education (HE). Vibha Puri Das, secretary - higher education, HRD ministry, says, "The XII (five-year) plan will emphasise expansion with consolidation, greater inclusion and focus on improving the quality of HE. The plan starting in 2012 is expected to be teacher-centric and student-driven. A significant target is, increasing the number of students in HE to reach a gross enrolment ratio of 30% by 2020. This would mean an additional 26 million students entering higher education by 2020."

Continued from page 1

ANTENNAS UP!

Shift in study abroad trends: The United Kingdom is changing its student visa system in phases with the third set of changes due to take effect in April 2012 when the post study work option ends. "However, there will still be opportunities for international graduates to stay on and work in graduate level employment in the UK. This will be under Tier-2 of the points based system, with a licensed employer," elaborates Sam Murray, regional communications manager, UK Border Agency, South Asia.

The changed economic scenario of Western countries is highly likely to influence outbound-students' decisions. Those who can't afford to go abroad can pursue a foreign degree within the country. Overseas institutions have started trickling in, even before the passage of the Foreign Educational Institutions (Regulation of Entry and Operation), Bill.

New common admission tests: Going forward, will there be fewer entrance tests? There are court-directed moves towards a single-test regime for various streams. After an interim Supreme Court order, the All India Council for Technical Education has launched a Common Management Admission Test for institutes approved by it. The national-level computer-based test is to take place from February 20 to 28. However, there has been resistance to the proposed common tests.

Greater role of ICT: Expect more integration of information and communication technology into the teaching-learning process. An upgraded version of the Aakash tablet PC for students, launched in 2011, is coming soon.

Sub-division of seats in the OBC quota: The government has cleared the 4.5% sub-quota for backward minorities within the 27% other backward classes (OBC) seat quota in educational institutions. The controversial sub-quota kicks in on January 1, 2012.

rbano@hindustantimes.com

Tribune ND 04/01/2012 p-1

China has overtaken India in science: PM

Pitches for doubling R&D spending to 2% of GDP

SURESH DHARUR/TNS

BHUBANESWAR, JANUARY 3

In a candid talk on the status of science and technology in India, Prime Minister Manmohan Singh today said the country was being overtaken by competitors like China and called for substantial increase in the investment in research and development, creation of new innovation eco-system and greater public-private partnerships.

"Over the past few decades, India's relative position in the world of science had been declining and we have been overtaken by countries like China. We need to do much more to change the face of Indian science," he said while inaugurating the 99th Indian Science Congress here.

Pointing out that India's R&D spending as a percentage of GDP had been 'low and stagnant', the PM made a strong pitch for increasing it to at least 2 per cent of the GDP from the current level of less than 1 per cent. "This can only be achieved if the industry, which contributes about one-third of the total R&D expenditure today, increases its contribution significantly," he told a gathering of nearly 15,000 delegates from across the globe, including scientists and policy makers.

The Prime Minister made a frank assessment of the country's progress in science and technology area, highlighted lacunae in the policies and implementation and called for greater alignment of the S&T sector with the inclusive development needs of the country.

Stressing the need for increased public-private partnerships, he said: "It is ironic that General Electric and Motorola have created world-class technology hubs in India while our own industry has not done so, except perhaps in the pharmaceutical sector. We therefore need to look at ways of incentivising private investment in research and development under Indian conditions."

Continued on page 11

PM Manmohan Singh and Orissa CM Navin Patnaik felicitate a tribal for biodiversity conservation during the 99th Indian Science Congress in Bhubaneswar on Tuesday. — PTI

GROUND **REALITY**

- India spends 0.9% of its GDP on Research & Development
- Industry contributes only 25 % of the total R&D expense
- India has moved from 15th position in 2003 to 9th in 2010 in publication of papers in peer reviewed journals
- India produces 8,900 PhDs every year in science & engineering, 3,000 more than five years ago

China has overtaken India in science: PM

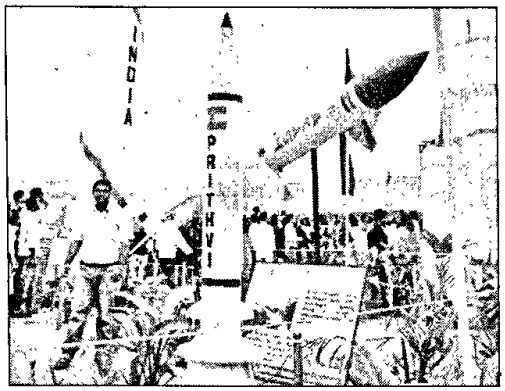
From page 1

Though science and engineering continued to attract some of the best students, many of them were switching over to other careers because of relatively poorer prospects in science, the Prime Minister said.

"We must also make scientific output more relevant to our stage of development. It is said that science is often pre-occupied with problems of the rich, ignoring the enormous and in many ways more challenging problems of the poor and the under-privileged," he said.

The expansion of basic science infrastructure, encouraging greater research collaboration among universities and national laboratories and enlarging the reach of international collaboration were among the other suggestions made by the Prime Minister.

"At present, publicly funded Research & Development is skewed in favour of fundamental rather than applied research. It is easier to attract industrial funds into applied research areas and a set of principles should be formulated to push such funding and to drive public-private partnerships in research and development," he said.



Missile models on display at the 99th Indian Science Congress at KIIT University in Bhubaneswar. — PTI

WOMEN **INSPIRE**

- 49.6% INSPIRE (Innovation in Science Pursuit for Inspired Research) awardees women
- 60% INSPIRE fellows pursuing doctoral research also happen to be women
- 60% of the 2,000 Indian women holding PhD in science were found to be unemployed by a survey last year. Lack of opportunities cited as main reason

Stating that the UPA government had declared 2010-20 as the 'Decade of Innovations', he appealed to scientists and policy makers to use the research-based knowledge productively for social benefit. "For a country grappling with the challenges of poverty and development, the overriding objective of a comprehensive and well-considered policy for science, technology and innovation should be to support the national objective of faster, sustainable and inclusive development," the Prime Minister said.

Economic Times ND 04/01/2012 P-3

China Overtaking India in Science: PM

Spending on research and development to be doubled, says Manmohan

NAGESHWAR PATNAIK
BHUBANESWAR

Admitting that India's position in the world of science was being overtaken by countries like China, Prime Minister Manmohan Singh on Tuesday announced that spending on research and development (R&D) would more than double by the end of the Twelfth Plan.

Inaugurating the 99th Indian Science Congress (ISC) here, Manmohan Singh said: "Over the past few decades, India's relative position in the world of science had been declining and we have been overtaken by countries like China."

"Things are changing, but we cannot be satisfied with what has been achieved. We need to do much more to change the face of Indian science. We must strengthen the supply chain of the science sector. While it is true that science and engineering continue to attract the best students, many of them later opt for other careers because of poor prospects in science," he said.

AFP

SCIENCE CONGRESS: Prime Minister Manmohan Singh in Bhubaneswar on Tuesday

The prime minister also emphasised the need for increasing spending in the science sector. "As far as resources are concerned, the fraction of GDP spent on research and development in India has been too low and stagnant. We must aim to increase the total R&D spending as a percentage of GDP to 2% by the end of the 12th Plan Period from the current level of about 0.9%," he said.

He said this can only be achieved if industry, which contributes only 25% of the total R&D expenditure today, increases its contribution.

"I believe public sector undertakings, especially in the energy sector, should play a major role in this expansion. We have to increase public-private partnerships and catalyse significantly increased interaction between publicly-owned S&T (science and technology) institutions and industry," he said.

"It is in some ways ironic that GE and Motorola have created world class technology hubs in India, while our own industry has not done so, except perhaps in the pharma sector," Singh said.

Stating that India had moved from the 15th rank in 2003 to the 9th rank in 2010 with respect to the number of publications in peer valued journals, the PM pointed out that India lagged behind on applied sciences and the focus was more on fundamental research.

The Union government is exploring the possibility to build national capacity and capability in supercomputing which will be implemented by the Indian Institute of Science, Bangalore, at an estimated cost of ₹5,000 crore, the PM said, adding that if that happened, it would push research in niche areas.

He also disclosed that the government is mulling over another proposal for setting up a Neutrino Observatory at Theni in Tamil Nadu at a cost of ₹1,350 crore to study the fundamental particles that form the universe.

"While research generates new knowledge, we need innovation to use this knowledge productively for social benefit. We need to give practical meaning to innovation so that it does not end up being just a buzz word, he said.

More than 15,000 delegates, including scientists and students, are participating in the January 3-7 event being held at the Kalinga Institute of Industrial Technology. The theme of the conference is "Science and Technology for Inclusive Innovation - Role of Women".

Things are changing, but we cannot be satisfied with what has been achieved. We need to do much more to change the face of Indian science
MANMOHAN SINGH
Prime Minister

Financial Express, ND 04/01/2012 P-3

India Inc's R&D spend too low, stagnant: PM

fe Bureau

Bhubaneswar, Jan 3: Prime Minister Manmohan Singh took a swipe at Indian industry on Tuesday saying its R&D spending was too low. Speaking at the inauguration of the 99th Indian Science Congress on Tuesday, he also admitted that the fraction of GDP spent on R&D in India had been too low and stagnant.

"We must aim to increase the total R&D spending as a percentage of GDP to 2% by the end of the 12th Plan, from the current level of 0.9%. This can only be achieved if industry, which contributes only 25% of the total R&D expenditure today, increases its contribution," he added.

Expressing his disappointment over Indian industries' contribution to R&D, he said it was an irony that GE and Motorola had created world-class technology hubs in India. "It is in some ways ironic that GE and Motorola have created world-class technology hubs in India while our own industry has not done so, except perhaps in the pharma sector," he said.

The PM said, as a result, China was marching ahead

PM Manmohan Singh at the Inaugural of 99th Indian Science Congress PTI

of India in science and technology. "Over the past few decades, India's relative position in the world of science has been declining and we have been overtaken by countries like China," he said.

Stating that there was a need to look at ways of incentivising private R&D investment under Indian conditions, the PM said steps should also be take to increase public-private partnership (PPP). Giving example of Biopolis of Singapore, where over 2,000 scientists and researchers from public laboratories and private industry are working together in the area of bio-science, he said there should be increased interaction between the publicly-owned science & technology institutions and industry.

Financial Chronicle
ND 4/01/2012
P-10

Science meet begins; PM calls for changing face of science

PRESS TRUST OF INDIA
Bhubaneshwar

WITH India overtaken by countries like China in R&D, Prime Minister Manmohan Singh on Tuesday outlined an ambitious plan to 'change the face' of science which includes doubling investments and urged women to take up careers in this area where they are under-represented.

Inaugurating the 99th Indian Science Congress, he voiced concern over a large number of women scientists remaining unemployed due to lack of job opportunities. Singh also asked the industry to increase expenditure on research and development (R&D) and help achieve the target of spending two per cent of the GDP on research by the end of the 12th Plan.

"This can only be achieved if industry, which contributes about one third of the total R&D expenditure today, increases its contribution. I believe public sector undertakings should play a major role in this expansion," he said.

Listing the objectives for the 12th Plan, Singh stressed on the need to expand the basic science infrastructure and to achieve greater alignment of the S&T sector with the inclusive development needs of the nation.

"We must encourage greater research collaboration among universities and national laboratories. We hope to use the National Knowledge Network to this end," Singh said.

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Author : Nagendar Sharma and Chetan Chauhan letters@hindustantimes.com
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Law, HRD ministries fight for control of legal education

Nagendar Sharma and Chetan Chauhan
letters@hindustantimes.com

NEW DELHI: The fight for the control of legal education courses being run in 913 colleges, 260 universities and 14 national law schools across the country has turned into a turf war between the ministries of Law and Human Resources Development (HRD).

The apex regulator for legal profession and education in the country, the Bar Council of India (BCI) has objected to the inclusion of legal education under the National Commission for Higher Education and Research (NCHER).

Through the NCHER, the government aims to set up a super regulator, which would subsume existing regulatory bodies such as UGC, All India Council for Technical Education and National Council for Teachers Education to bring transparency in regulating higher education.

Following the cabinet's approval, HRD minister Kapil Sibal had introduced the bill to create NCHER in the Rajya Sabha on December 27. "This Act shall apply to all the higher educational institutions and universities other than those institutions engaged mainly in agricultural education and research," states the bill.

The HRD ministry had overruled the objections raised by the law ministry on the issue before the matter went to the cabinet last month.

"To meet the emerging challenges of legal profession and education, a separate independent and specialised body is required. The law ministry is working towards that and had assured the parliament in this regard " stated a ministry note signed by law minister Salman Khurshid on December 11.

In its reaction to the development, the BCI said: "It is a serious matter and we view it as an encroachment on our powers. The HRD ministry should have taken us into confidence," said BCI chairman Ashok Parija.

"All option are open. We will first talk to the law ministry, which is our administrative ministry and if required, a call for a nationwide action, including a strike is not ruled out," Parija said.

The HRD ministry has a different take saying many law colleges were being run by universities and excluding them from the ambit of the proposed council would have defeated the purpose of having a uniform regulator for higher education.

STATEMAN ND 4,1,12 P-5

Celebrate mathematics

With this year being the 125th anniversary of Srinivasa Ramanujan's birth, s ananthanarayanan dwells on the genius that he was

IT'S been a century since Srinivasa Ramanujan flashed for a short while through the world of mathematics. A century, because it was around 1912 that his talent came to relevant notice, to be followed by eight years of unprecedented, and since unequalled, productivity — a corpus of originality and genius whose fascination has remained fresh and tantalising to this day. This year is also the 125th anniversary of Ramanujan's birth and has been declared by the government of India as National Mathematical Year.

Ramanujan was born in 1887 at Erode in Tamil Nadu, then Madras Presidency, and he displayed remarkable talent even when in junior school. By the time he was 13, he had mastered SL Loney's *Trignometry*, a fairly advanced standard textbook of mathematics, one that is normally completed only in university. When he was 16, he chanced upon a collection of problems, and theory in outline, which had been developed for aspirants to the Tripos Examination of the University of Cambridge. With little exposure to higher math, either in his curriculum or from his teachers, this collection of advanced and difficult problems opened the universe of number theory and higher algebra for Ramanujan.

He became fascinated by mathematics and worked at it to the exclusion of all else. While he never cleared his university exams, for want of credits in other subjects, and could not hold down a regular job, he rapidly discovered, in books or by himself, most of the mathematics that he would have learnt in a proper course of formal training. And along the way, he developed insights and broke fresh ground in the form of new formulae or theorems of clarity and power that took professional mathematicians by surprise. The work in these years was recorded, often with sketchy descriptions of the method followed, in notebooks that have now become celebrated as the first record of Ramanujan's early work.

He soon came to the attention of GW Hardy, a gifted professor at Cambridge, who was overwhelmed by the quality of his work. It was "certainly the most remarkable I have received", he said and added that Ramanujan was "a mathematician of the highest quality". Hardy lost no time in arranging for him to come over to work in England and the young Indian was soon imbibing aspects of mathematics so far unknown to him, and learning that much of what he had worked out by himself, to his chagrin, had been discovered earlier. But the academically rich environment of Cambridge made his undoubted talent flower and in the next five years, till he died at the young age of 32, he churned out a huge volume of work of the highest quality.

Nature of work

Ramanujan's life work had so much variety we cannot do better than glance at some typical areas. One of these concerned formulas to evaluate numbers that are expressed as the converging sum of an infinite series of reducing components. An example of an infinite series would be like: 1+1/2 +1/4 + 1/8 + 1/16 + 1/32 + … where the terms rapidly get smaller so that the later additions are small indeed. It can be shown that the terms of this series never add up to more than the number 2, even if we consider infinite terms. But a series like 1+ ½ + 1/3 + ¼, +1/5 + 1/6 + … where successive terms do not diminish as rapidly as the previous case, does not converge; but, if we go to infinite terms; adds up to infinity.

More complicated series even add up to values that can never be exactly stated, but need to be described only as an infinite series. One example of such a number is p, the ratio of the circumference of a circle to its diameter. In the correct statement of this number, the terms after the decimal point continue forever, and never even repeat, as happens with recurring decimals. The terms are therefore truly random, and series that add up to such numbers have fo long been of interest.

Ramanujan, with his uncanny, nearly inspired insight, came up with incredible formulas for such series, which bettered existing formulas by getting very close to the final decimal numbers even on evaluating only a few of the terms of the series, as the value of the terms diminished very rapidly. These formulas are hence a powerful way of generating numbers of the nature of p, correct to many decimal places, faster than by using other series expansions, where even the later terms made more substantial contributions.


Srinivasa Ramanujan

Another great area of Ramanujan's work is that of continued fractions. A continued fraction is a number that is a whole number plus a fraction. But the denominator of the fraction is also a number plus a fraction. And the denominator of that fraction is again a number plus a fraction, and so on. It would look like this:

$$x = b_1 + \cfrac{a_1}{b_2 + \cfrac{a_2}{b_3 + \cfrac{a_3}{b_4 + \cfrac{a_4}{\ddots}}}}$$ and so on

While any number can be expressed as a continued fraction by choosing the correct values for the "b" and "a" terms, we can see that it could even be a case of an "infinite" continued fraction. It is also possible, with some computation, to show that these fractions amount to a series, the infinite series representing numbers like p.

Such numbers where the sequence is essentially random are useful when expanded to a very large number of decimal places. In such an expansion, especially running to thousands of places, selecting any place to start would result in a sequence that would be unpredictable unless the starting point were known. Ramanujan's work made important contribution in the field, again with formulae that generate the expansions with the least computation. Such expansions have become useful to generate codes in e-commerce and, hence the value of formulae like Ramanujan's that generate the expansions efficiently.

The writer can be contacted at simplescience@gmail.com

Puzzles at a village inn

THE English magazine, *Strand*, carried a regular page of puzzles and problems under the title "Perplexities". The *perplexities* column of its December 1914 issue was written as a story — "Puzzles at a village inn" — and it worked in a report about the German excesses in the Belgian town of Louvain, where the Nazis were setting houses on fire, street by street, and destroying its great library.

A friend's address

The problem was to work out the number of a house on a street of Louvain. The writer spoke of a street where the houses were on one side and were numbered serially — one, two, three, and so on. The writer's friend stayed on the street, but the only thing the writer knew was that all the numbers on one side of the house added up to exactly the same as the numbers on the other side! And *Perplexities* invited readers to work out the friend's house number and visit him in the spring! Another bit of information was that there were at least 50 houses in the street, but not as many as 500.

It was PC Mahalanobis, who later became a great statistician, who brought the problem to Ramanujan. Mahalanobis himself had used trial and error and had worked it out in a few minutes.

Ramanujan did it his way. He got the answer too, at once. But he did it by developing one of his celebrated "continued fractions". The method immediately gave the only solution to the problem with more than 50 and less than 500 houses — No. 204 in a street of 288 houses. 1+2+3+4+...+277 adds up to 20706, which is the same as 205+206+...+288!


PC Mahalanobis

What is more, Ramanujan's method was the solution at once for the whole class of problems like this. For instance, if the number of houses was eight, then the solution was No. 6, because 1+2+3+4+5 = 15 and 7+8 = 15!

HindustanTimes
Title : career counselling - Do foreign degrees give better returns here?
Author : USHA ALBUQUERQUE
Location :
Article Date : 01/04/2012

Do foreign degrees give better returns here?

careercounselling

USHA ALBUQUERQUE

I'm a fifth semester student of electronics and communication engineering. I'm interested in MBA as well as MS. As far as interest is concerned, I have a knack for both and can study either. Which of these has more scope in India? Do foreign university degrees give you better returns even in India? Please advise.

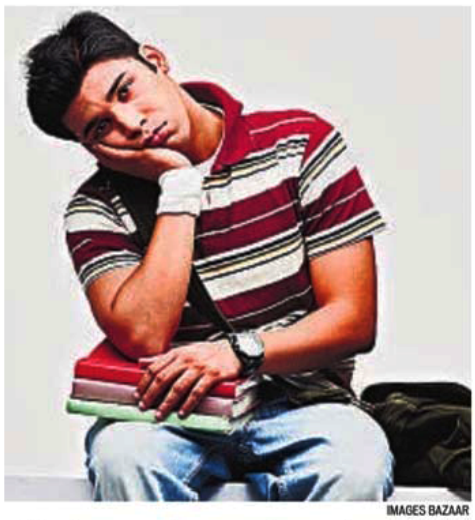
–Udit Narain Mahopatra

Whether you should pursue an MBA or an MS depends on what your career objectives are. The MBA, a very broad course covering a wide variety of business issues, equips students for careers in managing any area of business. MBA students study accounting, finance, marketing, statistics, management, economics, strategy, leadership and similar courses.

Electronics and communications engineering, on the other hand, is a branch of engineering that basically deals with the application of electronics in the field of communication. It focuses on transmission of information across various types of channels. This field of engineering is one of the most sought-after courses today. There are huge job opportunities for students with this degree. The job prospects of electronics and communication engineers are as varied as the kind of work they do. They can be found in the offices of any consulting firm, at the site of any mine or even in the protected lab environment of any fabrication plant, in the software department of banking institutions, or even maybe in the telecommunication branch of any IT company.

As far as the scope and job prospects of MBAs are concerned, the demand and popularity of business-related courses has been increasing because of economic growth in India. After doing an MBA, one can work in corporate settings, become an entrepreneurship, work in co-operatives and none-governmental organisations. It is true that every year a large number of students finish b-schools and it is also true that not all of them get jobs immediately. Nowadays in India in almost every nook and corner, there are MBA colleges and not all of them provide good placements. So, it is important to pursue an MBA from a well-known institute.

Whichever course you choose, it is important to do it from a good, well-recognised university or institute whether in India or abroad. Currently, the advantage institutes in India have is that campus placements take place at most of them, which may not be possible with a foreign degree.



IMAGES BAZAAR

Biotech vs computers

My granddaughter got admission in computer science at the University of Houston in 2009. For four semesters, the courses are common for all disciplines there. After two years, the student may make a choice and join another stream. She is planning to switch to biotechnology. Is it advisable? Is biotechnology a better choice compared to computer science? She would be interested in doing a post-graduate course, as well.

–AC Tripathi

It is likely that your granddaughter wants to opt for biotechnology because she enjoys the subject and may be looking at a research or academic career.

Biotechnology unifies biology and technology by covering a wide range of subjects like agriculture, animal husbandry, biochemistry, biostatistics, cell biology, chemistry, crop management, cropping system, ecology, engineering, genetics, health, immunology, medicine, microbiology, plant physiology, soil science, soil conservation, seed technology, and virology, etc. Jobs in biotechnology include working in the area of medical research, designing new biotech products, developing vaccines, diagnostic tools, production of biotech products, tissue culture for agriculture, marketing of biotech products, in areas of management, academics and training and so on.

Computer science, too, has immense possibilities but whether she takes up one subject or another should really depend on her interests and career goals.

Send your queries at hteducation@hindustantimes.com or to Career Counselling, HT Education, 1st floor, HT House, 18-20, KG Marg, New Delhi-110001

The columnist is the author of *The Penguin India Career Guide* and *The Essential Career Guide* and Director, Careers Smart Pvt. Ltd. Ph: 120-4313497/498

Times Of India ND 04/01/2012 p-4

4-year degree gets mixed response

While Many Admit Advantages Of Proposal, Most Want Issue Debated

Manash Pratim Gohain | TNN

New Delhi: Delhi University's proposal to introduce four-year undergraduate course received a mixed response from the teaching community, though most academicians and experts agreed in principle the move would benefit students. But many also expressed concern about the infrastructure crunch faced by most DU colleges and felt that wider discussions must accompany the fleshing out of the proposal.

DU vice-chancellor Dinesh Singh on Monday had said the university will introduce four-year degree from 2013, and planning for the same has begun.

Stating the proposal will offer many advantages for students, Sanjeev Grewal, senior faculty member (mathematics) at St Stephen's College, said a four-year degree would allow students to make an informed choice for specialization, unlike the three-year course.

"I don't know what the university exactly has in mind. But like the American system, this will allow the students to study a bit of pure sciences, social sciences, languages, among others, in the first year and provide them exposure to a wide range of academic disciplines. This will help students discover their aptitude before going in for specialization. Students will get the advantage of overall education, inter-disciplinary and specialized as well," said Grewal.

The report of the Planning Commission's working group on higher education also makes a strong case for a four-year undergraduate course. The report states, "Government may consider implementing the recommendations of the committee to introduce four-year undergraduate course to integrate education and skill. This may be initiated at least in all the central universities. Four years undergraduate study should have all the flexibilities to provide a variety of

choices to the students."

Principal of Sri Ram College of Commerce, P C Jain said the primary advantage would be to make job-oriented many courses that are gradually becoming redundant.

"In the extra year, students can be gainfully engaged in courses which will boost their employability, like say a student of Sanskrit can learn economics, mathematics or computer science," he said.

"Also, the vice-chancellor said that if a student wishes to go for postgraduation, the master's degree can be done in one year, which effectively means no loss of years. Moreover, if planned properly, the students wishing to go abroad for postgraduation need not spend a year on a bridge course," Jain added.

While most teachers agreed a four-year degree has more advantages, many also expressed concern about the infrastructure crunch faced by DU colleges and felt the need for wider discussions

Head and dean of faculty of education, Anita Rampal, however, felt that current issues should be resolved before initiating further reforms.

While agreeing to the advantages of a four-year degree, Rampal suggested a pilot run as the university is still settling down to the new semester system at the undergraduate level.

"The four-year course will not have the rigidity of a three-year degree programme, which is definitely an advantage. But we may do harm as the university is still settling down to the changes implemented recently. Right now the challenge is to address issues like internal assessment, semester curriculum and sort these out. The university can carry out a pilot run of the four-year degree course and see how it works," said Rampal.

Teachers, however, want wider discussions and also felt that no deadline should be set for the proposed move at this stage.

"Let us first discuss the feasibility of the proposal. Unless it is debated, it is going to create confusion among students and the academic fraternity. Each system has its pros and cons and therefore before accepting it, we have to deliberate and there should not be a strict timeline for its implementation," said Rajeev Verma, who teaches at Satyawati College.

manash.gohain@timesgroup.com

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British firm's bid to patent ginger foiled

Kounteya Sinha | TNN

New Delhi: India has foiled an attempt by a British pharmaceutical company to patent usage of ginger to treat cold.

While Indians have been gulping down 'adrak chai' for generations as a home remedy, Nicholas John Larkins, London, filed a patent application (GB2436063) titled "Pharmaceutical composition for the treatment of excess mucous production" on March 16, 2006 at the British patent office. The firm claimed a "unique finding" in the use of ginger (Zingiber officinale) and kutki (Picrorhiza kurroa) for the treatment of cough and lung diseases.

▶ Database helped, P 22

Remedy Rebound

- British pharma firm files for patent in 2006, claiming it **discovered use of ginger and kutki plant** in treatment of cold
- India cited **medicinal texts dating back to the 18th century** on use of ginger to treat cough, asthma & lung diseases
- British patent office accepts Indian evidence, **throws out application** 5 years later

"Within two weeks of India providing evidence (including 18th century texts), the attempt to pirate India's traditional medicinal knowledge was struck down by the UK patent office in 2011," a health ministry official said.

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Database helped thwart UK patent bid

Kounteya Sinha | TNN

New Delhi: Countering the patent claims of British pharmaceutical company on using ginger for the treatment of cough and cold, the department of AYUSH and Council of Scientific and Industrial Research (CSIR) intervened and provided evidence from age-old ayurveda and unani books, dating back to the 18th century that talked about ginger and kutki being used alone or in combination with other ingredients to treat cough, bronchial asthma and lung diseases.

The books that were referred to as evidence by CSIR included Ilaaj-al-Amraaz (18th century), Bhaisajya Ratnavali and Bharata Bhaisajya Ratnakara (1000 BC), Bayaaz-e-Kabir (1938 AD), Muheet-e-Azam (19th century) and Khazaain-al-Advia from the 20th century.

"India through the Traditional Knowledge Digital Library (TKDL) submitted its prior art evidences on April 25, 2011. The examiner terminated the patent application before grant," a health ministry official said. Till about 10 years ago, around 2,000 wrong patents concerning indigenous systems of medicine were being granted annually at the international level due to lack of evidence provided by India. The digital library has been a real boon for India. More than 2.26 lakh rare medical formulations which were part of the ancient Indian texts have been dug out, transcribed, documented and digitized into the path-breaking TKDL to protect them from biopirates.

STATEMAN ND 4,1,12,P-5

Unleashing spider web power

steve connor reports on a breakthrough that may pave the way for new biomaterials that could be used in medicine and engineering

SCIENTISTS have created genetically-modified silkworms that can spin the much stronger silken threads of spiders in a technological breakthrough that promises to revolutionise the production and use of new materials made with spider silk.

For more than a quarter of a century scientists have been trying to find ways of producing industrial-scale quantities of spider silk because, weight for weight, it is stronger than steel and almost as tough as bulletproof Kevlar. A net woven from pencil-thick rope spun from spider silk, for instance, could in theory catch a fighter jet in flight without breaking.

However, unlike the caterpillars of the silk moth *Bombyx mori*, spiders are territorial, aggressive and prone to cannibalism, making it impossible to rear them in the population densities required for commercial silk production. Researchers have attempted to overcome this difficulty by transferring into silkworms the key spider genes responsible for making the silk threads used in the draglines of the Golden orb-web spider. The result was a genetically-modified "transgenic" silkworm that produced a mixture of its own silk combined with the far tougher and stronger threads of spider silk within the mile-long threads of its cocoon.

The researchers, led by Professor Don Jarvis of the University of Wyoming, in Laramie, have published their study in the journal *Proceedings of the National Academy of Sciences*, showing how they created transgenic silkworms capable of making composite fibres with silk threads from both spiders and commercial silkworms.

"On average, the composite fibres produced by our transgenic silkworm lines were significantly tougher than those produced by the parental animals and as tough as native dragline spider silk fibre. In best-case measurements, the composite fibre produced by one of our transgenic silkworms was even tougher than the native dragline spider silk fibre," the scientists said.

Professor Don Jarvis (right).

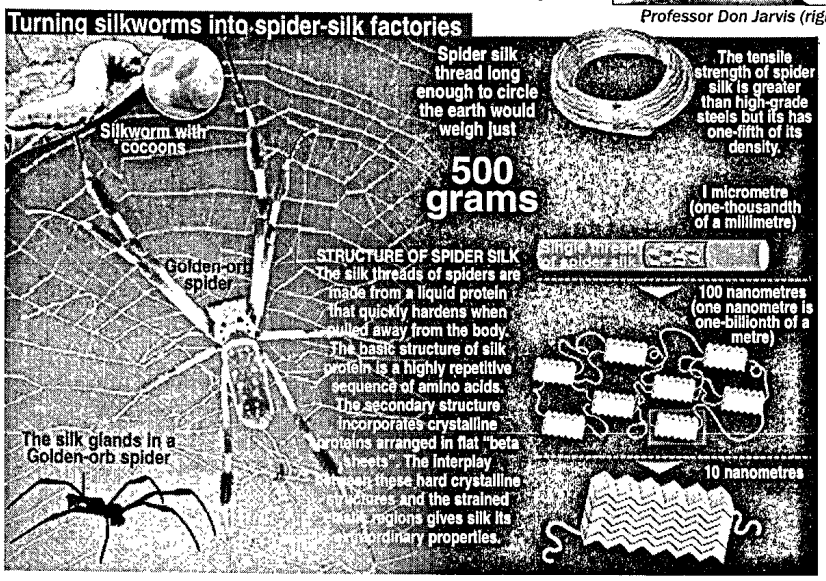
Some possible uses for spider silk had already been identified in medicine, such as new kinds of biomaterials for wound dressings, artificial ligaments, tendons, tissue scaffolds and microcapsules for drug delivery, they said. Other uses could include materials used in bulletproof jackets and engineering.

Ever since scientists first identified the spider genes involved with silk production, biotechnologists have tried to create genetically-modified alternatives to spiders. Synthetic spider silk genes have been transferred into bacteria, tobacco plants and even goats, which produced limited quantities of silk proteins in their milk.

However, none of the transgenic microbes, plants or animals carrying spider silk genes have been able to produce sufficient quantities of the pure proteins needed for commercial-scale production.

But it is hoped that the *Bombyx mori* silkworm, which has a proven record in industrial silk production, may finally offer a solution to the scale-up problem.

The Independent, London



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NCERT gets new director

Professor Parvin Sinclair of Indira Gandhi National Open University has been appointed new director of the National Council of Educational Research and Training (NCERT). She took over the charge on Monday from officiating director professor R Govinda, the vice-chancellor of National University of Educational Planning and Administration. Sinclair, a professor of mathematics at Ignou, had also served the university as its pro-vice chancellor for more than four years, and as director, School of Sciences and of School of Computer and Information Sciences. An alumnus of Tata Institute of Fundamental Research, Mumbai, IIT Delhi, and University of Delhi, Sinclair has been closely associated with the field of education, especially mathematics education and distance learning. TNN

Financial Chronicle ND 4/01/2012 P-10

IIM-R gets into anytime, anywhere learning mode

Students to take lectures through PCs, tablets or mobile handsets

S SHYAMALA
Chennai

STARTING this July, IIM-Ranchi students will get to learn truly anytime, anywhere. The institution proposes to take the "blended learning route" to make education more effective. Classrooms would primarily exist only for the sake of discussions and analyses.

"Why have dull, uninterested faces in the classroom, when technology would help to impart better learning?" asks Prof MJ Xavier, director, IIM-R. "If students don't feel like coming to class, they can access content from their hostels or anywhere else. That doesn't mean they can take it easy. Lectures can be taken through PC, tablets or mobile handsets but students can't login and run away. Every student has to participate in the sessions; attendance has to be marked every half-an-hour, and they should summarise what was taught, at the end of every lecture."

Bloomberg

LESSONS ON THE GO: IIM-R plans to record/livestream one-third of the course content that can be viewed by students

To start with, IIM-R plans to record/live stream one-third of the course content. Under the model, only 40 per cent of the assessment will depend on exam performance. The rest will be continuous assessment based on student interactions in the online platform, participations in discussions and collaboration with other students, Xavier said.

Apart from the regular two-year course, the institution is also extending this approach to its 18-month executive programme. At present, students attend classes at the campus once in two weeks. From November, one-third of the 600-hour programme will be delivered through video lectures. Students will be able to access the content in-between campus sessions, so that they don't lose touch with the curriculum, he added.

IIM-R has signed a memorandum of understanding with Chennai-based myBskool.com for technology and content delivery. This mode of learning will not only make education more effective but also affordable, Xavier said. While the executive in-campus programme would cost about Rs 4.5 lakh per student, this delivery model would reduce it to about Rs 1.5-lakh.

shyamalaseetharaman
@mydigitalfc.com

Financial Chronicle ND 4/01/2012P-10

Toast the Moon! Nasa is out to map lunar gravity

IRENE KLOTZ
Reuters

TWO robotic probes began orbiting the moon Sunday in preparation for an unprecedented mission to map the lunar interior.

Nasa's twin Gravity Recovery And Interior Laboratory, or Grail, spacecraft wrapped up 2.6-million-mile journey to put themselves into lunar orbit on Saturday and Sunday.

Over the next two months, the probes' 34-mile-high orbits will be adjusted to get them into optimal position to measure the pushes and pulls of the moon's gravity, data that scientists can use to model what is inside the moon.

"Pop the bubbly and toast the moon," Nasa wrote on its Twitter feed after the first Grail spacecraft finished a 40-minute braking manoeuvre at 5 pm EST on New Year's eve.

The second spacecraft followed suit 25 hours later. Both are needed for the intricate gravity-mapping mission scheduled to begin in March. "Everything is looking good," Nasa wrote as ground control teams received radio signals Sunday confirming the second spacecraft's arrival. "It's going to be a great 2012."

Over the next two months, the probes' orbits will be tweaked until they are flying in formation low over the lunar poles. As the spacecraft fly over denser regions of the moon, they will speed up slightly in response to the extra gravitational tugs.

By constantly measuring changes in the distance between the two craft, scientists can create a gravity map of the moon. The changes in speed will be as subtle as a fraction of a micron per second. A micron is about the width of a red blood cell. The data will be used to model the moon's interior, a key piece of information still missing despite more than 100 missions to the moon, including six human expeditions during Nasa's 1969-1972 Apollo programme.

In the orbit

- Nasa's Grail spacecraft wrapped up 2.6-million-mile journey to put itself into lunar orbit
- For next two months, the probes' orbits will measure the pushes and pulls of moon's gravity
- The data will be used to model the moon's interior, a key piece of information still missing

Punjab Kesari ND 4/01/2012 P-9

केआईआईटी विश्वविद्यालय भुवनेश्वर में मंगलवार को 99वीं इंडियन साइंस कांग्रेस के उद्घाटन कार्यक्रम के दौरान पुस्तक का विमोचन करते प्रधानमंत्री मनमोहन सिंह, उड़ीसा के राज्यपाल एम.सी. भंडारे, विज्ञान एवं प्रौद्योगिकी मंत्री विलासराव देशमुख, उड़ीसा के मुख्यमंत्री नवीन पटनायक। (छाया : प्रैट्ट)

वैज्ञानिक अनुसंधान पर खर्च बढ़ाने पर पीएम ने भरी हामी

भुवनेश्वर, (भाषा): विज्ञान के क्षेत्र में भारत का ओहदा चीन द्वारा हथिया लिए जाने का जिक्र करते हुए प्रधानमंत्री मनमोहन सिंह ने आज कहा कि वैज्ञानिक अनुसंधान पर खर्च को सकल घरेलू उत्पाद के कम से कम दो प्रतिशत तक बढ़ाया जाना चाहिए और इसमें उद्योगों का अधिक योगदान होना चाहिए। यहां के आईआईटी परिसर में 99वीं इंडियन साइंस कांग्रेस का उद्घाटन करते हुए प्रधानमंत्री ने कहा, "जहां तक संसाधनों का सवाल है, अनुसंधान और विकास पर सकल घरेलू उत्पाद का जो हिस्सा खर्च किया जाता है वह बहुत ही कम है।"

सिंह ने कहा, "पिछले कुछ दशकों में विज्ञान के क्षेत्र में भारत की स्थिति में गिरावट आई है और चीन जैसे देशों ने हमें पीछे छोड़ दिया है। चीजें बदल रही हैं और हम अपनी उपलब्धियों पर संतुष्ट होकर नहीं बैठ सकते। हमें भारतीय विज्ञान का भाग्य बदलने के लिए बहुत कुछ करने की जरूरत है।" उन्होंने कहा कि 12वीं योजना अवधि के अंत तक अनुसंधान और विकास पर खर्च किया जाने वाला धन सकल

- **अपनी उपलब्धियों पर संतुष्ट होकर नहीं बैठ सकते हम, भारतीय विज्ञान का भाग्य बदलने को बहुत कुछ करने की जरूरत**
- **जीडीपी का कम से कम दो प्रतिशत होना चाहिए अनुसंधान पर खर्च**

घरेलू उत्पाद का दो प्रतिशत करने का लक्ष्य होना चाहिए, जो इस समय 0.9 प्रतिशत है। आज अनुसंधान और विकास के कुल खर्च का एक तिहाई उद्योग द्वारा दिया जाता है। मेरा मानना है कि सार्वजनिक क्षेत्र के प्रतिष्ठान और खास तौर से इंजीनियरिंग क्षेत्र को इस विस्तार में बड़ी भूमिका निभानी चाहिए।" प्रधानमंत्री ने विभिन्न क्षेत्रों में अनुसंधान की जरूरत पर जोर देते हुए कहा कि सरकार सुपरकंप्यूटिंग में राष्ट्रीय क्षमता और सामर्थ्य निर्माण के प्रस्ताव पर विचार कर रही है। इसे भारतीय विज्ञान संस्थान, बेंगलुरु द्वारा तकरीबन 5000 करोड़ रुपए की लागत से कार्यान्वित किया जाएगा। उन्होंने कहा कि तमिलनाडु के थेनी में 1350 करोड़ रुपए की लागत से एक न्यूट्रिनो आब्जर्वेटरी स्थापित करने का भी प्रस्ताव है ताकि ब्रह्मांड की रचना करने वाले मौलिक तत्वों का अध्ययन किया जा सके। सार्वजनिक धन से वित्तपोषित विज्ञान और अनुसंधान का व्यवहारिक अनुसंधान की बजाय बुनियादी अनुसंधान की तरफ ज्यादा ध्यान होने का जिक्र करते हुए प्रधानमंत्री ने कहा, "व्यवहारिक अनुसंधान के क्षेत्रों के लिए औद्योगिक धन जुटाना आसान है।

Dainik Bhasker ND 4/01/2012 P-8

ऊना में आईआईआईटी खुलने का रास्ता साफ

नया मौका 128 करोड़ की लागत आएगी, 20 करोड़ की सहायता देंगे इंडस्ट्री पार्टनर

भास्कर न्यूज | शिमला

हिमाचल प्रदेश के पहले इंडियन इंस्टीट्यूट ऑफ इन्फॉर्मेशन टेक्नोलॉजी (आईआईआईटी) के निर्माण का रास्ता साफ हो गया है। 128 करोड़ रुपए की लागत से ऊना में प्रस्तावित इस आई आईआईटी के निर्माण के लिए तीन इंडस्ट्री पार्टनर्स ने सहमति दे दी है। ये तीनों पार्टनर इंस्टीट्यूट निर्माण में 20 करोड़ रुपए की वित्तीय सहायता देंगे।

इंडस्ट्री पार्टनर्स की सहमति के साथ ही प्रदेश सरकार ने अपनी ओर से सभी औपचारिकताएं पूरी कर केंद्र को मामला मंजूरी के लिए भेज दिया है। बहुत जल्द आईआईआईटी के निर्माण कार्य शुरू होने की उम्मीद जताई जा रही है।

प्रदेश के एक फार्मास्यूटिकल संघ, बिजली उत्पादक संघ और आईटी सेक्टर की कंपनियों का एक समूह बतौर इंडस्ट्री पार्टनर आगे आए हैं। तीनों संघ आईआईआईटी निर्माण में वित्तीय सहयोग देंगे। यह मामला काफी माह से अटका था। लंबी बैठकों के बाद सरकार को इंडस्ट्री पार्टनरों को इंस्टीट्यूट निर्माण में निवेश करने के लिए मनाने में कामयाब हुई है। आईआईआईटी की कुल लागत का 50 फीसदी भुगतान केंद्र सरकार करेगी जबकि 35 फीसदी लागत को प्रदेश सरकार वहन करेगी। इसके अलावा इंस्टीट्यूट के लिए भूमि की व्यवस्था करने की जिम्मेदारी भी प्रदेश सरकार ही करेगी। आईआईआईटी निर्माण के लिए केंद्र की इंडस्ट्री पार्टनर होना एक प्रमुख शर्त थी जिनके नहीं मिलने से ही मामला बीच में अटका हुआ था। प्रधान सचिव तकनीकी शिक्षा एसके दास ने इसकी पुष्टि की है। उन्होंने माना कि आईआईआईटी निर्माण के लिए तीन इंडस्ट्री पार्टनर आगे आए हैं।

छात्रों को मिलेगा एक और बड़ा शिक्षा संस्थान

केंद्र से मंजूरी मिलते ही प्रदेश के स्टूडेंट्स को एक और बड़ा शिक्षण संस्थान मिलेगा। स्टूडेंट्स प्रदेश में ही बेहतर भविष्य बना सकेंगे। वहीं, करोड़ों रुपए की

वित्तीय सहायता देने वाले इंडस्ट्री पार्टनर्स को बोर्ड ऑफ गवर्नर में शामिल किया जाएगा। इसके साथ ही इंडस्ट्री पार्टनरों को इसी आईटी इंस्टीट्यूट से कुशल कर्मचारी मिलेंगे। ये शोध करेंगे और आईटी समस्याओं के समाधान के लिए भी आईटी इंस्टीट्यूट की सेवाएं ले सकेंगे।