K.L.N.College of Engineering

Approved by AICTE and Affiliated to Anna University
(An ISO 9001 : 2008 Certified Institution)
Pottapalayam - 630612
Sivagangai District, Tamil Nadu, India

January - June 2016 Volume-1 Issue- 1

Department of Computer Science and Engineering

(2nd time Accredited by NBA, New Delhi)
(Research Center Recognition by Anna University, Chennai)

INTERFACE Newsletter

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(An ISO 9001 : 2008 Certified Institution)
Pottapalayam - 630612
Sivagangai District, Tamil Nadu, India

Website URL :http://www.klnce.edu

E-Mail ID: info@klnce.edu

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

Frequency: Bi-Yearly
January- June 2016

INTERFACE Newsletter

Volume-1
Issue- 1

Our College Vission & Mission

Vision

To become a Premier Institute of National Repute by Providing Quality Education, Successful Graduation, Potential Employability and Advanced Research & Development through Academic Excellence.

Mission

To Develop and Make Students Competent Professional in the Dynamic Environment in the field of Engineering, Technology and Management by emphasizing Research, Social Concern and Ethical Values through Quality Education System.

Our Department

Computer Science and Engineering graduates are widely employed in the software industries throughout the world. Some of the graduates are employed in the hardware, Communication and ITES industries also. Computer Science and Engineering demands a blend of creative and technical skills. A number of opportunities exist in systems development across a range of application domains, as well as in the relatively newer areas of intelligent systems, interface design and Tele computing. Due to the globalization, there is a wide opportunity of employment for the Computer Science and Engineering graduates. The formation of various technical parks / software parks throughout the country makes a great demand for the Computer Science and Engineering course in the Engineering graduates are employed as researchers in many research organizations like DRDO, ISRO, BARC, IGCAR, etc.

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To prepare responsible professional Engineers in the field of Computer Science & Engineering and computing applications through quality education, training and innovative research.

Mission

To produce successful and creative interdisciplinary Computer Science & Engineering graduates in solving problems, in tune with the needs of global work environment and committed to continuous learning with integrity of character for positive contributions to society.

Program Educational Objectives (PEOs) by CSE Dept

The educational objectives of the Computer Science and Engineering (CSE) program represent major accomplishments that our graduates are expected to achieve within three to five years after graduation and more specifically,

Program Educational Objectives (PEO)

PEO I: Pursue career / higher education by acquiring the fundamental knowledge in Mathematics, computing principles and Engineering. (Knowledge)

PEO II: Apply the principles of Computer Science and Engineering for analyzing the real world requirements to produce cost effective and acceptable Technical solutions. (Apply)

PEO III: Sustain as good professionals and practice in emerging technologies through Lifelong learning. (Profession)

PEO IV: Build professionalism, teams work, effective communication skills ethical values and leadership qualities (value)

Program Specific Outcome (PSO)

PSO 1: Ability to apply the acquired knowledge of basic skills, principles of computing, mathematical foundations, algorithmic principles, modeling and design of computer-based systems in solving engineering Problems.

PSO 2: Ability to understand and analyze the interdisciplinary problems for developing innovative sustained solutions with environmental concerns.

PSO 3: Ability to update knowledge continuously in the tools like Rational Rose,MATLAB,NS, Argo UML and technologies like storage, Computing, communication to meet the industry requirements.

PSO 4: Ability to manage effectively as part of a team with professional behavior and ethics.

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Department of Computer Science and Engineering

INTERFACE *News Letter*

Frequency: Bi-Yearly
January – June 2016 **Volume - 1 Issue – 1**

Our Sincere Thanks to

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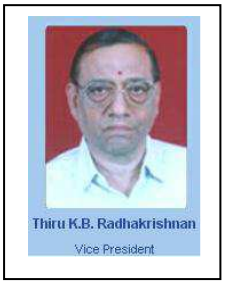
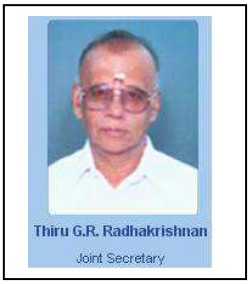
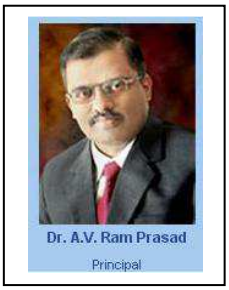
Message from Management







At the outset, wecongratulate the CSE Department and specially the Newsletter Committee members for their efforts in bringing out the Newsletter. Newsletter is an amalgamation of all the events held in the department and it plays an instrumental role in providing a greater exposure of the achievements accomplished by the students and the faculty. We wish all the very best in your endeavors.

Principal's Message

As students are the members of a progressive society, the teachers shall not fight today battle with yesterday's weapon, but they must prepare themto face all the eventualities of life.Thus, teachers are the architects of a country.Consequently the true education should deepen our insight, widen our horizon and create a meaningful outlook. Equally the students are fortunate enough to haveborn in afree nation, with all the facilities to shape their career in such a way, that theyshouldbe part of a good and healthy society with progressive attitude towards divinity.

HOD's Message

My appeal to my dear students is to attend all classes, make use of library extensively and readtext books regularly take part in technical paper presentations and seminars and undergo training in various skills sets, so that, they will not face difficult times in their professional career since, they will be mostly on standalone mode. In thisrespect, I humbly request the parents and guardians to show more interest in their wards day to day activities and overall performance. Parents are also attending the parents association meetings held by the college.

From the Editor's Desk

Dear students,

Hearty welcome to the newly launched CSEDepartment's first issue of the Newsletter for the academic year 2015-2016.

The objectives of the Newsletter is to mainly focus on the

➢Achievements of the Students and Faculty members from the CSE dept in Curricular, Co-curricular and Extra-curricular Activities.

➢The Recent trends in the area of Computer Science & Engineering and related areas.

I congratulate all my team members for their constant efforts in launching this News Letter. We are Very Grateful to our Management, EO, and Principal for their Support and Encouragement.

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Students' Corner Page No

Tech Trend

About Our Department

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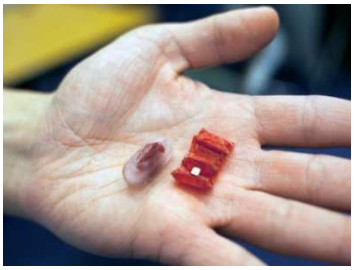
Students' Corner

Origami Robots enter the fold - Ms.Nisha, ME.,(CSE)

Ingestible robot operates in simulated stomach Robot unfolds from ingestible capsule, removes button battery stuck to wall of simulated stomach.

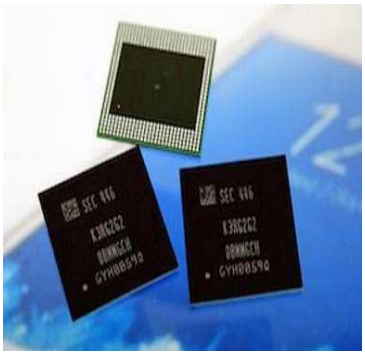


In experiments involving a simulation of the human esophagus and stomach, researchers have demonstrated a tiny origami robot that can unfold itself from a swallowed capsule and, steered by external magnetic fields, crawl across the stomach wall to remove a swallowed button battery or patch a wound. The new work, which the researchers are presenting this week at the International Conference on Robotics and Automation, builds on a long sequence of papers on origami robots from the research group of Daniela Rus, the Andrew and Erna Viterbi Professor in MIT's Department of Electrical Engineering and Computer Science."It's really exciting to see our small origami robots doing something with potential important applications to health care," says Rus, who also directs MIT's Computer Science and Artificial Intelligence Laboratory (CSAIL). "For applications inside the body, we need a small, controllable, untethered robot system. It's really difficult to control and place a robot inside the body if the robot is attached to a tether."JoiningRus on the paper are first author Shuhei Miyashita, who was a postdoc at CSAIL when the work was done and is now a lecturer in electronics at the University of York, in England; Steven Guitron, a graduate student in mechanical engineering; Shuguang Li, a CSAIL postdoc; Kazuhiro Yoshida of Tokyo Institute of Technology, who was visiting MIT on sabbatical when the work was done; and Dana Damian of the University of Sheffield, in England.Although the new robot is a successor to one reported at the same conference last year, the design of its body is significantly different. Like its predecessor, it can propel itself using what's called a "stick-slip" motion, in which its appendages stick to a surface through friction when it executes a move, but slip free again when its body flexes to change its weight distribution.Also like its predecessor -- and like several other origami robots from the Rus group -- the new robot consists of two layers of structural material sandwiching a material that shrinks when heated. A pattern of slits in the outer layers determines how the robot will fold when the middle layer contracts.The robot's envisioned use also dictated a host of structural modifications. "Stick-slip only works when,

one, the robot is small enough and, two, the robot is stiff enough," says Guitron. "With the original Mylar design, it was much stiffer than the new design, which is based on a biocompatible material."To compensate for the biocompatible material's relative malleability, the researchers had to come up with a design that required fewer slits. At the same time, the robot's folds increase its stiffness along certain axes.But because the stomach is filled with fluids, the robot doesn't rely entirely on stick-slip motion. "In our calculation, 20 percent of forward motion is by propelling water -- thrust -- and 80 percent is by stick-slip motion," says Miyashita. "In this regard, we actively introduced and applied the concept and characteristics of the fin to the body design, which you can see in the relatively flat design."It also had to be possible to compress the robot enough that it could fit inside a capsule for swallowing; similarly, when the capsule dissolved, the forces acting on the robot had to be strong enough to cause it to fully unfold. Through a design process that Guitron describes as "mostly trial and error," the researchers arrived at a rectangular robot with accordion folds perpendicular to its long axis and pinched corners that act as points of traction.In the center of one of the forward accordion folds is a permanent magnet that responds to changing magnetic fields outside the body, which control the robot's motion. The forces applied to the robot are principally rotational. A quick rotation will make it spin in place, but a slower rotation will cause it to pivot around one of its fixed feet. In the researchers' experiments, the robot uses the same magnet to pick up the button battery.The researchers tested about a dozen different possibilities for the structural material before settling on the type of dried pig intestine used in sausage casings. Li says. The shrinking layer is a biodegradable shrink wrap called Biolefin.To design their synthetic stomach, the researchers bought a pig stomach and tested its mechanical properties. Their model is an open cross-section of the stomach and esophagus, molded from a silicone rubber with the same mechanical profile. A mixture of water and lemon juice simulates the acidic fluids in the stomach.Every year, 3,500 swallowed button batteries are reported in the U.S. alone. Frequently, the batteries are digested normally, but if they come into prolonged contact with the tissue of the esophagus or stomach, they can cause an electric current that produces hydroxide, which burns the tissue.. So that made me realize that, yes, this is important. If you have a battery in your body, you really want it out as soon as possible."

IBM's new tech can make your smartphones run blazing fast

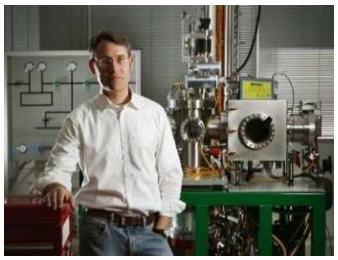
-Ms.M.S.Subiksha, BE., (CSE)



NEW DELHI: When it comes to modern-day gadgets like smartphones and PCs, Magnetic storage (e.g. hard disks) and flash memory (e.g. RAM) are the two dominant technologies used for manufacturing primary memory and secondary storage solutions. But as fast as flash-based and magnetic memory solutions make our devices, what if they could be made even faster? Thanks to phase-change memory (PCM), it could soon be the case. Scientists at IBM have achieved a breakthrough with phase-change memory, using it to reliably store 3 bits of data per cell. Phase-change memory is a type of random access memory that works by exploiting the unique behavior of chalcogenide glass. As digital memory is comprised of 0s and 1s, a '0' can be programmed to be written in amorphous phase and '1' in crystalline phase, or vice-versa. Read and write operations are performed by applying low and high voltages. This is the technology used by Blu-ray discs to store content. Phase-change memory doesn't lose data when switched off and can last up to 10 million write cycles. To put it in perspective, a USB flash drive lasts only about 3,000 write cycles. Previously, scientists had demonstrated the ability to store 1 bit per cell. But this time, they managed to successfully store 3 bits per cell in a 64k-cell array, demonstrating the technology at the IEEE International Memory Workshop in Paris. The same was done at elevated temperatures and after 1 million endurance cycles. IBM Research's manager of non-volatile memory research Dr.HarisPozidis said that reaching 3 bits per cell is a significant milestone, because at this density the cost of phase-change memory will be significantly less than DRAM and closer to flash memory . This breakthrough in phase-change memory has the potential of revolutionizing gadgets like PCs and smartphones . It can be embedded in mobile devices to store the operating system and firmware, enabling them to boot up in seconds. The technology holds promise for the enterprise sector as well. Large databases could be stored in phase-change memory based storage solutions for extremely fast query processing and data retrieval, such as in case of financial transactions. Phase-change memory might just prove to be the next big innovation that future generation of smart devices need.

Australian researchers build world's first scanning helium microscope

- Ms.T.K.Ananthy, B.E., (CSE)



MELBOURNE: The World-first scanning helium microscope has been built by Australian researchers who feel it could "open doors" for many new discoveries by allowing scientists to scrutinize materials without disturbing them. Paul Dastoor of University of Newcastle who has been working on the scanning helium microscope (SHeM) for two decades said the new microscope will enable scientists to study human, animal and plant samples, as well as computer chips and pharmaceutical drugs, without damaging or changing them. He said the scanning helium microscope means the samples will be analysed in their true state for the first time ever and every time a new microscope was developed there had been enormous scientific advances. "We wouldn't know anything about bacteria without the development of the optical microscope, we wouldn't know anything about nanotechnology, without the development of the electron microscope. What exactly will the new helium microscope tell us? We don't know yet. What will it open the doors to? We don't know yet, but it will open doors" Dastoor added. The scientist said SHeM could be useful in major industries such as solar energy, defence, explosives and information technology. "The new device is expected to pave the way for many new discoveries, because it gives new insight on structures at a microscopic level," he said. He led the team of researchers from the University of Newcastle, and collaborated with scientists from England's University of Cambridge. "We're opening a window onto a new scientific world," Dastoor said adding scientists would be able to see much smaller objects with a much higher resolution. Dastoor further said that the ground-breaking technology may help find ways of removing carbon monoxide from exhaust gases. He also said SHeM could help with the clean-up of toxic or even radioactive spills, without harming the surrounding flora or fauna.

Virtual realityhelp companies earn real profits–Ms.R.Sindhiya, M.E., (CSE)

NEW YORK: A growing number of US companies are counting on virtual reality for real profits. With growth hard to come by amid the lethargic economy, companies ranging from snowmobile manufacturers to furniture sellers are incorporating virtual reality that so far has mostly been found in video games. Their bet: That the trendy headset-based technology can help them build sales and cut costs. Theme park operator Six Flags Entertainment is outfitting riders on some of its ageing roller coasters with Samsung VR headsets , allowing the company to brand the rides as brand-new without having to build costly new attractions. Snowmobile manufacturer Arctic Cat has developed virtual reality rides that customers can use to try out new models at dealerships, while eBay's StubHub is testing technology that allows fans to check out the view from different seats before buying tickets. In the most recent round of corporate earnings reports, some 38 companies - including the New York Times, GoPro, and furniture-seller Wayfair -- highlighted virtual reality as a part of their business plans. Nearly all were either consumer or technology companies, suggesting that virtual reality technology has a ways to go before becoming main stream. The increasing focus on virtual reality comes at a time when first-quarter earnings for the S&P 500 are expected to fall 5.4% from the same time last year, while second-quarter earnings are expected to fall 3.4% from the year before, according to Thomson Reuters estimates. There are few pure plays for investors who want to buy into virtual reality. Facebook, which paid $2 billion for its Oculus virtual reality division in 2014 and began shipping its first $599 Oculus Rift headsets in March, has the best-known virtual reality head gear, though other well-known companies including Google's parent Alphabet and Apple are rumored to be working on high-powered headsets of their own. Neither company returned requests to comment.

Virtual reality is such a small part of Facebook's business that most analysts do not break out Oculus in their revenue or earnings estimates. Nor did Facebook give any numbers on how many Oculus headsets it expects to sell on its most recent earnings call. "This is very early and we don't expect VR to take off as a mainstream success right away ... but eventually we believe that VR is going to be the next big computing platform and we're making the investments necessary to lead the way there," chief executive Mark Zuckerberg said. Some analysts, however, already are seeing a boost to the companies they cover. "But I can tell you that I think they are going to report record results this year because their growth rate is accelerating, and the growth rate wouldn't be accelerating if they didn't have it." Outfitting riders with VR headsets is much cheaper than building an entirely new roller coaster, he added, while only requiring three additional employees two to disinfect the headsets after each ride and one to make sure riders have them on correctly. As a result, he's been buying shares of Facebook , whose Oculus technology could become the industry standard. "It's cost-effective, it's efficient, and it helps you avoid some of the problems that come with adding new employees," he said.

Infosys using own coding to install solar capacity

–Ms. M.Jeeva,M.E.,(CSE)

BENGALURU: Infosys is using a bit of its own technology to come up with standards for its future solar installations as the technology firm aims to build 170 MW of solar capacity over the next four years to bring down its dependence on the grid power to zero.

A signatory to the global RE 100 campaign with a goal of getting 100 per cent electricity from renewables, Infosys finds regulatory gaps in India for solar installations even as the country targets about 1 lakh MW of capacity by 2022 involving an investment of Rs 6 lakh crore."We have stringent specifications for the auto industry, but sadly, the government has not notified any for the solar industry. This is the situation in spite of large sums of money being spent on solar projects," Infosys Executive Vice President RamadasKamath told ET.

The tech firm has set up labs to gather real-time field-level data. "We are using the data from our own rooftop lab in Electronic City, Bengaluru and MW-scale lab in Pocharam, Hyderabad, to lay down specifications for our future projects," he added. Infosys has 42.33 million sqftarea across 13 campuses in India, and is developing another 6.5 million sqft area. The Indian market, according to Infosys Regional Manager (Infrastructure) Ramesh RameGowda , is flooded with all kinds of photovoltaic (PV) modules. "We don't have firm guidelines in India in areas like factory inspections, raw material selections, testing standards updated with latest experiences in the field," he said. According to a last year's study by IIT-Bombay, the modules installed in small scale in the past two years have faced mo re degradation than the modules installed five years ago. "The rising demand for modules and falling tariffs could be driving down the quality of PV modules landing in India," Gowda said. How a solar module has performed in lab conditions in Europe or China is no guarantee that it will perform in the same way in an Indian region. "There is an urgent need for India to have own standards and compliances with respect to photovoltaic modules and in verters to meet specific weather conditions," he said. Infosys is using instrumentation technology to gather and crunch data such as solar intensity, soiling loss, DCAC conversion, data from weather monitoring stations, sun tracking etc, to get more power conversion at the panels. In the last seven years, while Infosys increased its absolute infrastructure by 150 per cent, the absolute power consumption during this period has risen only 13 per cent because of initiatives such as retrofits, new designs, and other innovations, according to Kamath. While an Infosys employee consumed 297 units per month at the campus in India in 2007-08, the same dropped to 150 per employee per month in 2015-16. "We want to further bring this down by 25 per cent in four years. Our 450-acre Hyderabad SEZ has recorded the lowest consumption of 100 units per employee per month," he said.

Smart contact lens for diabetics- Ms.S.Sahebzathi, M.E.,(CSE)

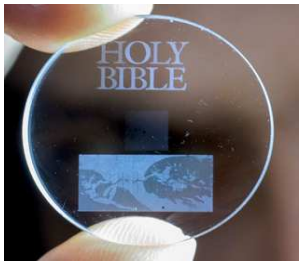
Prototype aims to measure glucose levels in tears and remove need for inconvenient blood

Diabetics could in future avoid painful pinprick blood glucose tests using a smart contact lens being developed at Google which measures glucose levels in tears. A prototype shown off by the company uses an embedded miniaturized glucose sensor and wireless chip in a contact lens to measure glucose in tears as often as once every second. That would make monitoring glucose levels - an essential task for diabetics, who are at risk of heightened or lowered blood-sugar levels - faster, easier and less painful because it would remove the need to break the skin and measure blood glucose levels directly. Diabetes, caused by a deficiency of the sugar-regulating hormone insulin, affects around 5% of people in developed nations. It is a leading cause of kidney failure, blindness and amputations if insufficiently treated. Diabetics who aren't able to keep their blood sugar levels under control risk going into a coma, and there is also a higher likelihood of long-term damage to blood vessels and the eyes, with associated risks of stroke and blindness. “Although some people wear glucose monitors with a glucose sensor embedded under their skin, all people with diabetes must still prick their finger and test drops of blood throughout the day. It’s disruptive, and it’s painful,” explained Otis and Parviz. “As a result, many people with diabetes check their blood glucose less often than they should.”'Seek out projects that seem a bit speculative or strange'. Google is currently talking to the US Food and Drugs Administration, which regulates drugs and medical applications, about selling it as a medical device, and seeking partners among medical experts to bring a smart contact lens and apps to market.“We’ve always said that we’d seek out projects that seem a bit speculative or strange, and at a time when the International Diabetes Federation is declaring that the world is 'losing the battle' against diabetes, we thought this project was worth a shot,” Otis and Parviz said of Google X labs, which also developed Google's self-driving cars and Google Glass, the company's smart glasses.

Tiny crystal stores 360TB of data for billions of years

-Ms.S.Gayathri, M.E.,(CSE)

Scientists have announced a major step forward in creating "5D" data storage that can survive for billions of years.



Scientists at the University of Southampton, England, have achieved a major step forward in the creation of digital data storage that is capable of surviving for billions of years. Using nano structured glass, researchers from the University's Optoelectronics Research Centre (ORC) have developed the recording and retrieval processes of five dimensional (5D) digital data by fem to second laser writing. The storage allows unprecedented properties including 360 terabytes (TB) per disc capacity, thermal stability up to 1,000°C and a virtually unlimited lifetime at room temperature (or 13.8 billion years at 190°C), opening a new era of eternal data archiving. As an extremely stable and safe form of portable memory, the technology could be highly useful in organisations with big archives, such as national archives, museums and libraries, to ensure their information and records are kept perfectly preserved. The technology was first experimentally demonstrated in July 2013, when a simple 300 kb text file was recorded in 5D. Now, major documents from throughout human history – such as the Universal Declaration of Human Rights, Newton's Opticks, Magna Carta and Kings James Bible – have been saved as digital copies that could survive the human race. The documents were recorded using an ultrafast laser, producing extremely short and intense pulses of light. The file is written in three layers of nano structured dots separated by five micrometres (a millionth of a metre). The self-assembled nanostructures change how light travels through glass, modifying the polarisation of light, which is then read by a combination of optical microscope and a polariser, similar to that found in Polaroid sunglasses. Coined as the "Superman memory crystal", as the glass memory has been compared to the "memory crystals" used in the Superman films, the data is recorded via self-assembled nanostructures created within fused quartz. The information encoding is realised in five dimensions: the size and orientation in addition to the three dimensional position of these nanostructures.

CONTROL YOUR OWN HEALTH CARE DATA

-Ms.C. Subhashri ,M.E., (CSE)

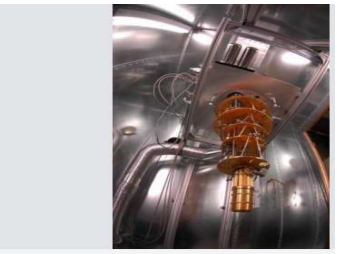
If you have ever stayed at a hospital, visited a physician's office or filled a prescription at a U.S. pharmacy, your medical information—stripped of identifying data—is most likely collected, shared and analyzed for various medical and marketing purposes. Your data may have helped a pharmaceutical company sell more drugs, a researcher find a better treatment option for a disease or a government agency predict the next flu outbreak. This is done through a multibillion-dollar industry that feeds on your medical data and reaps millions of dollars from analyzing it, without asking your permission or sharing the resulting profits with you. To protect patient privacy in this health care system, we make every effort to limit the exchange of identifiable medical information to only the parties that are directly involved in a patient's medical care. Although patients can still request their records be sent to others, they are never involved in the medical data-mining industry. Despite some concerns, lawmakers argue that as long as personal identifiers are removed from medical records, patient identity is protected, thus allowing companies to collect, exchange and mine heaps of de-identified medical data without patient consent by many different entities on a regular basis. To understand the medical benefit of this data to patients, consider Alzheimer's disease, which is the nation's most expensive disease, affecting over 5 million Americans each year and yet still has no cure. Despite notable efforts, such as the Alzheimer's Associations' Trial match program, it is very difficult to find qualified patients to enroll in clinical trials. But a system in which interested individuals could share their detailed medical records with Alzheimer's researchers and pharmaceutical companies, so that they may analyze it and alert them about their qualification for one of these extremely expensive clinical trials, would not only help reduce the time and cost it takes to complete the trial—benefiting society (and of course pharmaceutical companies)—but could also potentially save patients' lives by diagnosing disease early or even finding a treatment.

The personal financial benefit of patients' health data is also worth noting. We should allow patients to decide with whom they wish to share their medical record—and get compensated accordingly. If there is a market for medical data, then patients should be able to sell their data to whomever is willing to pay for it. But the benefits of disclosing health information are not necessarily medical or economic: Once individuals are given the choice, pure altruistic motives will be strong enough for a majority of them to freely disclose their information. Rather than bypassing them, we should allow patients to personally control their privacy. In other words, rather than protect health privacy itself, the government should instead protect the people's right to control their health privacy. Before using their data, we should seek patients' permission and share the medical, economic and altruistic benefits of their medical data. We now have the technological capability to put patients at the center of medical information exchange systems. Known generally as consumer-mediated exchanges, these systems allow patients to save, manage, and share their own records. They are fairly suitable to address this need and further allow patients to selectively share their records with certain entities based on different medical and financial reasons.

Tech Trend

D-Wave Systems

-Ms.V.R.SWATHI,B.E.,(CSE)



The D-wave systems fridge with cryogenic packaging.

A computer science professor at Amherst College who recently devised and conducted experiments to test the speed of a quantum computing system against conventional computing methods will soon be presenting a paper with her verdict: quantum computing is, "in some cases, really, really fast.""Ours is the first paper to my knowledge that compares the quantum approach to conventional methods using the same set of problems. The quantum computer system she was testing, produced by D-Wave just outside Vancouver, BC, has a thumbnail-sized chip that is stored in a dilution refrigerator within a shielded cabinet at near absolute zero, or .02 degrees Kelvin in order to perform its calculations. Whereas conventional computing is binary, 1s and 0s get mashed up in quantum computing, and within that super-cooled state of flux, a lightning-quick logic takes place, capable of solving problems thousands of times faster than conventional computing methods can, according to her findings."You think you're in Dr. Seuss land," McGeoch says. "It's such a whole different approach to computation that you have to wrap your head around this new way of doing things in order to decide how to evaluate it. It's like comparing apples and oranges, or apples and fish, and the difficulty was coming up with experiments and analyses that allowed you to say you'd compared things properly. It definitely was the oddest set of problems I've ever coped with."McGeoch, author of A Guide to Experimental Algorithmics, has 25 years of experience setting up experiments to test various facets of computing speed, and is one of the founders of "experimental algorithmics," which she jokingly calls an "oddball niche" of computer science. Her specialty is, however, proving increasingly helpful in trying to evaluate different types of computing performance. That's why she spent a month last fall at D-Wave, which has produced what it claims is the world's first commercially available quantum computing system. Geordie Rose, D-Wave's founder and Chief Technical Officer, retained McGeoch as an outside consultant to help devise experiments that would test its machines against conventional computers and algorithms. Her 10-page-paper, titled "Experimental Evaluation of an Adiabiatic Quantum System for Combinatorial Optimization," was co-authored with Cong Wang, a graduate student at Simon Fraser University. McGeoch says the calculations the D-Wave excels at involve a specific

combinatorial optimization problem, comparable in difficulty to the more famous "travelling salesperson" problem that's been a foundation of theoretical computing for decades. Flight scheduling, search optimization, DNA analysis and encryption, and are extremely difficult to answer quickly. The D-Wave computer has the greatest potential in this area, McGeochsays."This type of computer is not intended for surfing the internet, but it does solve this narrow but important type of problem really, really fast," McGeoch says. "There are degrees of what it can do. If you want it to solve the exact problem it's built to solve, at the problem sizes I tested, it's thousands of times faster than anything I'm aware of. If you want it to solve more general problems of that size, I would say it competes -- it does as well as some of the best things I've looked at. At this point it's merely above average but shows a promising scaling trajectory."McGeoch, who has spent her academic career in computer science, doesn't take a stance on whether the D-Wave is a true quantum computer or not, a notion some physicists take issue with."Whether or not it's a quantum computer, it's an interesting approach to solving these problems that is worth studying," she says. Whether the D-Wave computer will ever have mass market appeal is also difficult for McGeoch to assess. While the 439-qubit model she tested does have incredible computing power, there is that near-zero Kelvin chip operating temperature requirement that would make home or office use a chilly proposition. At present, she thinks the power of the D-Wave approach is too narrowly focused to be of much use to the average personal computer user. While conventional approaches to solving these problems will likely continue to improve incrementally, this fast quantum approach has the potential to expand to larger variety of problems than it does now, McGeochsays."Within a year or two I think these quantum computing methods will solve more and bigger problems significantly faster than the best conventional computing options out there," she says. At the same time, she cautions that her first set of experiments represents a snapshot moment of the state of quantum computing versus conventional computing."This by no means settles the question of how fast the quantum computer is," she says. "That's going to take a lot more testing and a variety of experiments. It may not be a question that ever gets answered because there's always going to be progress in both quantum and conventional computing."

Low Battery- New Tech Lets You Wirelessly Share Power

- **Mr.R.R.Ramkarthick,B.E.,(CSE)**

PowerShake allows mobile and wearable devices to wirelessly charge other mobile and wearable devices on the go.

It's any phone-obsessed person's nightmare: you're out, your phone's battery is depleted down into the red zone, and there's not an electrical plug in sight. But one day, mobile and wearable devices could engage in "power-sharing," by wirelessly charging each other on the go, researchers say.This innovative solution could help people easily recharge mobile or wearable gadgets, particularly for tasks such as emergency phone calls, the scientists added. Mobile and wearable devices are now virtually everywhere, but their battery lives remain limited, with many lasting for less than a day. A number of devices now exist to provide extra power to mobiles and wearables, such as power packs, mobile hand generators and solar cells. But although external power packs have become popular, they add size and weight, and mobile hand generators and solar cells produce only limited amounts of power. Instead, an invention called Power Shake allows mobile and wearable devices to wirelessly charge other mobile and wearable devices on the go, even when those devices are being held or worn. Wireless-charging technologies are becoming more prevalent, but many of these stations are fixed, and do not account for devices near or in contact with skin.

"When mobile phones first came out, people really found them liberating because they didn't have to be attached to a wire, but they actually still do have to be attached to a wire when they recharge," said study co-author Mike Fraser, a computer scientist at the University of Bristol in England. "So now we're seeking to liberate mobile phones again, to help them manage power without plugging in." Wireless charging involves at least two coils — one in the power transmitter, and one in the power receiver. When an electric current passes through the power transmitter coil, it creates an electromagnetic field that can transfer charge to another coil. Power transmission is best at close distances, the scientists said. The researchers experimented with a variety of power transmitter and receiver coils. They also devised electromagnetic shielding made of ferrite plates and copper tape on the back of coils in order to prevent any transmitted energy from reaching human tissue. They noted flexible coils were also possible, and potentially embeddable in watch straps. In experiments, Power Shake fit into small devices, met wireless power transfer safety guidelines, and performed about as well at power transmission as commercial alternatives, such as the Qi wireless charging pad, transferring about 3.1 watts of power, the researchers said. They estimated that about 12 seconds of charging would support 1 minute of additional talk time, while 2 minutes of charging would support about 4 minutes of video watching. One drawback of Power Shake is that twice as much energy needs to be transmitted as is received."The power transfer is not ever going to be cost-free," Fraser told Live Science. "That's just the intrinsic power cost of wireless charging in general — wireless charging is always going to consume more power than wired charging."In workshops, the researchers found that volunteers exploring the potential usefulness of Power Shake liked the idea of sharing power with their friends or family. However, due to the power costs of Power Shake, volunteers noted that if they needed to make an emergency call, they would probably just ask to borrow a phone instead of asking for power. Still, "if one needs to complete something on a particular device, and have already started but are running out of power halfway through and can't switch devices, this could help people," Fraser said. The researchers now seek to have volunteers test PowerShake in real environments, "to see if it actually works, and if

people do find it useful," Fraser said. The scientists detailed their findings May 11 at the annual CHI conference on human-computer interactions in San Jose, California.

World's first wireless satellite

-Ms.V.K.Monika, B.E.,(CSE)

A satellite whose components are not connected through electric cables but miniaturised radio modules: This innovation has earned two computer scientists from the University of Würzburg the first place in the INNO space Masters competition. Professor Sergio Montenegro and his fellow researcher Tobias Mikschl have reason to be happy: A few days ago, the two computer scientists from the Julius-Maximilians-Universität (JMU) Würzburg in Bavaria, Germany, took to the podium in Berlin -- as the overall winners of the INNOspace Masters competition and as winners of the category "DLR Space Administration Challenge." DLR is the national aeronautics and space research centre of the Federal Republic of Germany. What the price was awarded for: Montenegro and Mikschl developed Skith, a technology for the world's first wireless satellite. Previously, all single components of a satellite had to be interconnected using electric cables. Skith has changed that by using miniaturised high-speed real-time radio modules with short ranges. This reduces design effort and costs while boosting the satellite's technical reliability and flexibility.

Test in space planned for 2018

"The system is ready and waiting in our labs to be tested in space under real conditions," says Mikschl. In 2018 already, Skith could hitch a ride on a satellite to be launched into space, allowing the system to prove how well it functions under real conditions. Skith stands for "skip the harness." As a reward for their innovation, Montenegro and Mikschl received a certificate, a satellite-shaped trophy and the invitation to apply for money with the DLR to fund new projects.

Facts about the competition

The DLR has organised the competition for the first time. Under the motto "Satellite 4.0," participants were invited to submit suggestions and concepts for the future of aeronautics. 50 companies, universities and research institutions from eight European countries participated. In the end, nine finalists in three competition categories convinced the jury with their ideas. The awards ceremony took place at the INNOspace Masters Conference in Berlin on 4 May 2016.The competition is organised by DLR Space Administration on behalf of the German Federal Ministry for Economic Affairs and Energy. The competition is part of the INNOspace initiative that has promoted innovations and technology transfers between astronautics and other industry sectors since 2013.

Tongue Drive System to Operate Computers -Ms.V.R.Swathi, B.E.,(CSE)

Scientists developed a new revolutionary system to help individuals with disabilities to control wheelchairs, computers and other devices simply by using their tongue. Engineers at the Georgia Institute of Technology say that a new technology called Tongue Drive system will be helpful to individuals with serious disabilities, such as those with severe spinal cord injuries and will allow them to lead more active and independent lives. Individuals using a tongue-based system should only be able to move their tongue, which is especially important if a person has paralyzed limbs. A tiny magnet, only a size of a grain of rice, is attached to an individual's tongue using implantation, piercing or adhesive. This technology allows a disabled person **to** use tongue when moving a computer mouse or a powered wheelchair**.** Scientists chose the tongue to control the system because unlike the feet and the hands, which are connected by brain through spinal cord, the tongue and the brain has a direct connection through cranial nerve. In case when a person has a severe spinal cord injure or other damage, the tongue will remain mobile to activate the system. *"Tongue movements are also fast, accurate and do not require much thinking, concentration or effort."* said Maysam Ghovanloo, an assistant professor in the Georgia Tech School of Electrical and Computer Engineering. The motions of the magnet attached to the tongue are spotted by a number of magnetic field sensors installed on a headset worn outside or an orthodontic brace inside the mouth**.** The signals coming from the sensors are wirelessly sent to a portable computer that placed on a wheelchair or attached to an individual's clothing.

The Tongue system is developed to recognize a wide array of tongue movements and to apply specific movements to certain commands, taking into account user's oral anatomy, abilities and lifestyle.*"The ability to train our system with as many commands as an individual can comfortably remember is a significant advantage over the common sip-n-puff device that acts as a simple switch controlled by sucking or blowing through a straw,"* said Ghovanloo.

The Tongue Drive system is touch-free, wireless and non-invasive technology that needs no surgery for its operation. During the trials of the system, six able-bodied participants were trained to use tongue commands to control the computer mouse. The individuals repeated several motions left, right, up and down, single- and double-click to perform computer mouse tasks. The results of the trials showed 100 percent of commands were accurate with the response time less than one second, which equals to an information transfer rate of approximately 150 bits per minute. Scientists also plan to test the ability of the system to operate by people with severe disabilities. The next step of the research is to develop software to connect the Tongue Drive system to great number of devices such as text generators, speech synthesizers and readers. Also the researchers plan to upgrade the system by introducing the standby mode to allow the individual to eat, sleep or talk, while prolonging the battery life.

Achievements

Faculty

NAME & DESIGNATION OF THE STAFF	EVENT	VENUE
Dr.N.Lakshminarasimman HOD/CSE	Certificate of outstanding contribution in Reviewing	
Dr. R. Alageswaran, Professor/CSE	Reviewer for the National Journal of Physiology, Pharmacy and Pharmacology	
Dr. R. Alageswaran, Professor/CSE	Reviewer for the International Journal of Advanced Intelligence Paradigms (IJAIP), Published by Inderscience Publishers Ltd	
Dr.N.Lakshminarasimman HOD/CSE	IONS 324 AB Multiple district award for Best District Chairperson-Information Technology	Vestry School, Trichy
Dr.N.Lakshminarasimman HOD/CSE Mr.R. AnandhaMurugan AP2/CSE	Best Faculty award for the 2nd year – Infosys- Bronze Medal - Certification given by Infosys for excellence in Staff partner at Infosys	Infosys, Chennai
Mr.B.ChandranSekaran AP (Sr.Gr) / CSE Mr.R. AnandhaMurugan AP / CSE	Inspire Excellence Award contest - Gold Level	
Ms.G.Saranya, AP / CSE	Inspire Excellence Award contest - Silver Level	Infosys, Chennai
Dr.N.Lakshminarasimman HOD/CSE Mrs.P.R. Vijayalakshmi, Prof. /CSE Ms.S.Bridha, AP / CSE	Inspire Excellence Award contest - Bronze Level	Infosys, Chennai
Mr.B.ChandranSekaran AP2 (Sr.Gr) / CSE	Academic Leader award from EMC^2 - for conducting Cloud Infrastructure and Services(CIS) through ICTACT Academy of Tamil Nadu and done 225 Certifications for the students of 2014 and 2015 Batches.	Multinational Company at EMC^2 academic Summit 2015,Hotel Le Royal Meridian@Chennai 12th Feb 2015

Students

Sl. No.	Name of Student	Name of the Program	Duration & Number of Days	Venue
1	T.M Darsan	New Generation Seminar	4-6-2014	Rotatry Clubs of Madurai
2	R.Sahana	Inplant training on Java	10-6-2014 to 20-6-2014	KLNCE
3	M.V.Priyadharshini	linchpin	12-6-2014	Thiagarajar college of Engineering, Madurai
4	K.M.Santoshsabarish	linchpin	12-6-2014	Thiagarajar college of Engineering, Madurai
5	R.Sahana	linchpin	12-6-2014	Thiagarajar college of Engineering, Madurai
6	T.M Darsan	Tryst'14	20-6-2014	Rotract cub of PSNA CET
7	K.M.Santoshsabarish	ornithopter	6-7-2014	The institution of engineers(India) Hyderabad
8	K.M.Santoshsabarish	Workshop on design and development	6-7-2014	The Institution of engineers(India) Hyderabad
9	T.Marydhanushya	Linux	8-7-2014	KLNCE
10	R.Sahana	Linux	8-7-2014	KLNCE
11	P.K.Gujhambika	Linux workshop	14.7.14	KLNCE,Sivagangai
12	M.V.Priyadharshini	Hardware training programme	27-7-2014	S.R.software, Madurai
13	K.M.santosh	C and .NET	27-7-2014	S.R.software, Madurai
14	T.Marydhanushya	Hardware training programme	27-7-2014	S.R.software, Madurai
15	M.Jeyanthy	Youth Talk	4-9-2014	ICT Academy of TamilNadu
16	B.Kavipriya	Paper Presentation	10-9-14	RVS college of EnggDindugal
17	A.E.Monica	Manush –Human Resource meet	13.9.14	KLNCE, Sivagangai
18	K.H.Niranjana	Manush –Human Resource meet	13.9.14	KLNCE,Sivagangai
19	P.K.Gujhambika	Manush –Human Resource meet	13.9.14	KLNCE,Sivagangai
20	P.V.Vigneswari	Manush –Human Resource meet	13.9.14	KLNCE,Sivagangai

EMPLOYMENT OPPURTUNITIES IN STATE ANDCENTRALGOVERNMENTSECTOR

Government of Tamil Nadu offering various Direct recruitment to the services of the TN state recruiting through Tamil Nadu Public Service Commission (TNPSC) and TN VelaiVaaippu (Employment Exchange). The TamilNadu state (Capital City: Chennai) run various Public Sector Units, Statutory corporations and Cooperative societies.

About TNPSC

The commission to conduct examinations for direct recruitment of Group1, Group 2, Group 4, Technical posts and Village Administrative Officers (VAO) vacancies in TN State Various Govt. Departments. Candidates are required to do One-time registration for apply TNPSC Exams.

About TN VelaiVaipu

TN VelaiVaippu is an employment and Training Job registration portal of Employment and Training Department, Govt. of TamilNadu. 8th, 10th, 12th, Graduate and Post Graduate TN Jobseekers are required to register TN VelaiVaippu Official website.

Govt Jobs in TamilNadu 2016 TN VelaiVaippu

Looking for the TamilNadu Government Jobs 2016 through TN VelaiVaippu, You will have to get yourself register through the *TN VelaiVaippu Online Employment Registration* system. Department of Employment and Training oversees the *TN VelaiVaippu online renewal system*. www.recruitmentnjobs.net will give you all the latest jobs from TamilNadu, candidates are required to visit this website daily for the latest jobs. We update our website daily for the candidates of TamilNadu who are looking for the TN Govt. jobs. Just look at the given section for more jobs.

1. IGCAR Recruitment 2016 igcar.ernet.in Technical Officer Vacancy
2. UIIC Recruitment 2016 uiic.co.in 300 Administrative Officer Vacancy
3. NCSCM Recruitment 2016 ncscm.res.in 33 Project Staff Vacancy
4. Chennai Customs Recruitment 2016 chennaicustoms.gov.in 27 Various Vacancy
5. TRB TamilNadu Recruitment 2016 trb.tn.nic.in 222 Lecturer Vacancy
6. TN Postal Circle Recruitment 2016 www.dopchennai.in 143 Postman Mail Guard Vacancy Online Application Form
7. BHEL Tiruchirappalli Recruitment 2016 Artisan Fitter Welder 200 posts careers.bhel.in
8. Tirunelveli District Court Recruitment 2016 ecourts.gov.in 24 Office Assistant Vacancy
9. AHD TamilNadu Recruitment 2016 Veterinary Assistant Inspector 1101 Posts
10. VOC Port Trust Recruitment 2016 vocport.gov.in Vacancy
11. Shipping Corporation Of India Recruitment 2016 shipindia.com 15 Assistant Manager Vacancy
12. Cuddalore District Court Recruitment 2016 ecourts.gov.in 78 Various Vacancy
13. TRB Tamil Nadu Recruitment 2016 trb.tn.nic.in 222 Vacancy
14. TANGEDCO Recruitment 2016 www.tangedco.gov.in Technical Assistant 1475 Posts
15. TN HFWD Recruitment 2016 tnhealth.org 110 Vacancy

16. MRB Tamil Nadu Dark Room Assistant Recruitment 2016 1091 posts at mrb.tn.gov.in
17. Wellington Cantonment Board Recruitment 2016 cbwellington.in Vacancy
18. TAICO Bank Recruitment 2016 taicobank.in 19 Vacancy
19. TN MRB Recruitment 2016 Lab Technician GRADE-III www.mrb.tn.gov.in 710 Vacancy
20. DGET Recruitment 2016 www.skilltraining.tn.gov.in Trainee Officer 329 Posts
21. RRB Chennai Recruitment 2016|www.rrbchennai.gov.in|Assistant Station Master
22. Alagappa University Recruitment 2016|alagappauniversity.ac.in|Library Assistant
23. Tamil Development and Information Department Recruitment 2016|Cameramen|135 Posts
24. NLC Recruitment 2016|www.nlcindia.com|Executive Engineer|103 Posts
25. RGCA Recruitment 2016|www.rgca.org.in|Technician|Project Manager|53 Posts
26. Tamil Nadu Newsprint & Papers Limited Recruitment 2016|www.tnpl.com|Semi Skilled Trainee
27. Bharathidasan University Recruitment 2016|www.bdu.ac.in|University Research Fellowship
28. NSIC Recruitment 2015|www.nsic.co.in|Application Form | Apply Online
29. TNAU Junior System Analyst Recruitment 2015|Walk In|03 Posts
30. TNPSC VAO Recruitment 2015|tnpsc.gov.in|813 Vacancy| Syllabus |Admit Card
31. Southern Railway Recruitment 2016 sr.indianrailways.gov.in 862 Apprentice Vacancy

Central Govt. Public Sector Units in TN

* Neyveli Lignite Corporation Limited (NLC), Chennai
* Bharat Heavy Electrical Limited (BHEL), Trichy
* Chennai Metro Rail Limited (CMRL), Gopalapuram, Chennai
* Chennai Petroleum Corporation Ltd. (CPCL), Chennai
* Nuclear Power Corporation of India Limited (NPCIL), Kancheepuram
* National Textile Corporation Limited (NTCL), Coimbatore
* Bharatiya Nabhikiya Vidyut Nigam Ltd., Chennai
* Ennore Port Ltd., Chennai
* Hindustan Photo Films Manufacturing Co. Ltd., Ootacamund
* Madras Fertilizers Limited, Chennai
* Sethusamudram Corpn. Ltd., Chennai
* Tamil Nadu Trade Promotion Organization, Chennai
* United India Insurance Company, Chennai
* RailTel Corporation of India Limited, Chennai

Tamil Nadu Government Organizing Industries

* Tamil Nadu Newsprint and Papers Limited (TNPL)
* Tamil Nadu Cement Corporation Limited (TANCEM)
* Tamil Nadu Magnesite Limited (TANMAG)
* Tamil Nadu Industrial Explosives Limited (TEL)
* Tamil Nadu Minerals Limited (TAMIN)
* Tamil Nadu Small Industries Corporation Limited (TANSI)
* Tamil Nadu Co-operative Sugar Federation (TNCSF)
* Tamil Nadu Salt Corporation Limited (TNSC)
* Southern Structurals Limited (SSL)
* Tamil Nadu Paints and Allied Products Limited (TAPAP)

TamilNadu Govt. approved Banks

* TamilNadu Industrial Cooperative Bank Limited (TAICO Bank)
* TamilNadu Co-operative State Agriculture & Rural Development Bank.
* TamilNadu State Apex Co-operative Bank (TNSC Bank)

ENGINEER JOBS 2016

Engineering Graduates, who pursing final year or recently completed engineering degree holders get your discipline wise suitable Government jobs - latest recruitment / vacancy details here. Engineering Graduates recruiting Government of India owned Public Sector Undertakings Companies / Organizations List: BHEL, BEL, Coal India, HPCL, EIL, BPCL, Mazagon Dock, MECON, NACL, NLC, NMDC, SAIL, NTPC, IOCL, ONGC, Power Grid, Railtel, RITES, UCI etc.

Educational Qualification: Four Year B.E. / B.Tech full time regular course/s from AICTE approved / UGC recognized University/Deemed University. Some vacancies required to GATE qualified candidates.

Engineering Disciplines: Civil Engineering, Electrical Engineering, Mechanical Engineering, Electronics Engineering, Computer Engineering / Information Technology, Chemical Engineering, Telecommunications Engineering, Automobile Engineering etc.

Latest Engineering Jobs 2016 List Below:

Organization	Post Name - No of Vacancies
ISRO ICRB	Scientist / Engineer 'SC'
Airports Authority of India (AAI)	Manager
UPRVUNL	Assistant Engineer (Trainee)
GIDC (Gujarat)	Deputy Executive Engineer, Assistant Engineer, Additional Assistant Engineer
IPRC	Graduate Apprentice
GRSE, Kolkata	Assistant Manager
Numaligarh Refinery Limited	Graduate Engineer Trainee
Air India Express	Analysts
GRSE	Assistant Manager
PowerGrid	Engineer / E2A
Allahabad Bank	Civil Engineer, Electrical Engineer
Konkan Railway	Project Engineer
Meghalaya PSC	Assistant Engineer, Drilling Engineer
Central University of Haryana	Executive Engineer, Assistant Engineer
HSCC India Limited	Engineer (Trainee)
BPCL	Engineer(Trainee)
GATE 2016 wise Govt Jobs	Various Engineers
GATE 2015 wise Govt Jobs	Various Engineers

Other Government Jobs for Engineers (Fresher's & Experienced Candidates):

Fresh and Experienced IT Graduates get Government Jobs in IT Sector Here. Information technology (IT) in India consist of two components: IT Services and business process outsourcing (BPO). IT field is playing an major role in Indian Economy, This sector generating 2.5 million direct employment in India.

Government of India Major IT Organizations such as Centre for Development of Advanced Computing (CDAC), National Informatics Centre (NIC), Education and Research Network (ERNET India), Haryana State Govt owned Haryana State Electronics Development Corporation Limited (HARTRON) and Software Technology Parks of India (STPI).

CDAC -> C-DAC is the premier Research and Development organization of the Department of Electronics and Information Technology (DeitY), Ministry of Communications & Information Technology (MCIT) for carrying out R&D in IT, Electronics and associated areas.

CDAC Branches Located at Pune (Headquarters), Ahmedabad, Bangalore, Chennai, Delhi, Hyderabad, Kolkata, Mohali, Mumbai, Noida and Thiruvananthapuram.

NIC -> NIC is a Premier Science & Information Technology Organization in India. The NIC is under Ministry of Communications and Information Technology's Department of Electronics & Information Technology. Its providing State of Art Solutions for Information Management and Decision Support in Government and Corporate Sector. A number of Services are being provided by NIC to all the Government Ministries / Departments / States / Districts.

IT Fresher Qualifications: B.E. / B.Tech in IT, Computer Science and Electrical Communication Engineering
Latest Computer / Software / IT Jobs in Govt. Organizations / Institutions / Public Sectors Vacancies Opening listed on the following Table:

Govt Organization	Name of Post
BSPHCL	IT Manager
High Court	Software Programmer, HardwareEngineer
HARTRON	IT Professionals
FDDI	Asst. Manager (ITSC), Sr. System Asst. / System Assistant
IREDA	Senior Manager (IT) / Assistant Manager (IT)
IIM Sirmaur	Assistant System Analyst
GIDC (Gujarat)	Programmer

Employment Opportunities in Governments in India and Public and Financial Sectors

Thousands of annual employment opportunities are available in the Governments of India and states like former Andhra Pradesh, and the public and financial sectors. This summarizes the types of jobs available for fresh graduates by broad categories. It also explores emerging employment opportunities in India in specific selected public sectors and the economy in general. It briefly outlines the minimum educational qualifications, entrance/application procedures, etc. For jobs in central and state governments. It concludes with the suggestion that fresh graduates in India, encouraged by their teachers and employment counsellors, may need to explore more sustainable employment in government and public sectors.

Introduction

Most students, especially in engineering, management and other disciplines, aspire for employment in domestic and international private / corporate organizations. These aspirations are based primarily on peer group and parental expectations. This is at least partly because they are not equally aware of more sustainable employment opportunities in central and state

governments and economic and financial public sectors. Such employment may offer lower salaries compared to the private sectors. But the procedures for recruitment, retention and promotion etc. are under prescribed norms, and guidance of the Union Public Service Commission and Ministry of Human Resource Development, or State Public Service Commissions.

Government Sectors in India/ Central Government Services

Hundreds of employment opportunities for fresh graduates from universities and colleges are annually available in Indian Administrative Service, Indian Police Service, Indian Forest Service, Indian Revenue Service, Indian Foreign Service, Indian Economic Service, Indian Information Service, and in various Central Government ministries, departments and agencies. Furthermore, Central Government owned public enterprises (CPSUs) and banks (CPSBs) offer similar number of annual employment opportunities. Recruitments and promotions in the Central Services are as per the guidelines of Union Public Service Commission. CPSUs and CPSBs have prescribed by their own governing board.

State Governments

In the Government of Andhra Pradesh (bifurcated in 2015 into Telangana and Andhra Pradesh) general annual openings exist in various departments and agencies, starting with Deputy Collector(Group I), Municipal Commissioner (GroupII), Junior Inspector (Group III), and various departments, e.g., Transport, Social Welfare, Medical and Health, Education, Judicial and many State-owned enterprises. Recruitments and promotions in the State Government are under the directions and guidance of State Public Service Commission and boards of State-owned enterprises. All in all, the number of jobs annually available for fresh graduates and post-graduates in Central Government and State of Andhra Pradesh (now Telangana and Andhra Pradesh) alone may add to thousands. Similar number of annual employment opportunities exist in other States in India, and public enterprises and financial sectors.

Minimum Qualifications and Other Stipulations

All applicants to Central and State government services except Group IV, mostly manual workers should have at least a Bachelor's degree in any discipline from an academic institution recognized by India's University Grants Commission, Association of Indian Universities. Minimum age limits are generally in the early 20s. There are specified quotas for socio-economically disadvantaged communities like Scheduled Castes and Scheduled Tribes, Other Backward Classes, sometimes also for women and local/state populations. There are also service or post-specific eligibility criteria, advertised application procedures, entrance tests and interviews as per Ministry of Human Resource Development, UPSC, and other concerned central organizations like CPSUs and CPSBs boards, and their counter parts at State levels.

Banking and Financial Sectors

Banking sector in India is growing rapidly, more and more services adding to the banking services, such as insurance, pension, and other financial products. As the accounts have increased around 20 percent, there is a scope for increasing employment opportunities in the banking sector. If the employment opportunities increase in proportion to the accounts, for 7.25 lakh employees, the increase would be 1.45 lakhs. No sector has seen such a rapid growth.

Unlike in the private sector banks, pay differentials are low and job security is high in the public sector banks. Clearly, these developments offer thousands of annual employment opportunities in the public financial sectors.

Make in India

"Make in India" is an initiative of the Government of India, launched on 25September 2014. The initiative is focused on promoting innovation, and manufacturing in the country in the 25 sectors: automobiles, automobile components, aviation, biotechnology, chemicals, construction, defence manufacturing, electrical machinery, electronic systems, food processing, IT and BPM, leather, media and entertainment, mining, oil and gas, pharmaceuticals, ports, railways, renewable energy, roads and highways, space, textiles and garments, thermal power, tourism and hospitality, and wellness. This initiative will not all help attract investments from abroad but also promote local investment, thus adding to employment opportunities.

Concluding Remarks: It has outlined the large number of employment opportunities in government of India, public sector and financial enterprises, infrastructural, energy and banking and financial sectors, and the Indian economy more broadly.

Jobs through UPSC IES exam

Indian railway service of engineers, Indian railway stores service, central engineering service, Indian defences service of engineers, Indian ordinance factories service, central water engineering grade "A" service, central engineering service group A, assistant

executive engineer-border roads engineering service, assistant executive engineer P&T building works grade A service, central power engineering service-grade A, Indian telecommunication service.

Research organizations

Opportunities in Defence Research and Development Organization (DRDO), BABA Atomic research centre (BARC), Department of Atomic energy and Department of space.

Entrance into BARC through GATE

BARC under the central government offers many scientist level jobs taking GATE score as a standard. DAE graduate fellowship program for engineering graduates is also being offered.

Defence Research and Development Organization (DRDO)

DRDO plays a very important role in their search and development of weapons, missiles and other advanced technical equipment to enhance the countries defence system. There are almost 50 laboratories working under its control and there are so many jobs in these centres as junior engineers and scientists.

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Mr.T.R.Varunkumar, B.E.,(CSE)

HIGHER STUDIES AND SCHOLARSHIP IN INDIAN UNIVERSITY

Scholarships in India:

Under its NarotamSekhsaria Scholarship Programme, the Foundation awards interest free loan scholarships to Indian students with a consistently good academic record. Scholarships are offered for postgraduate studies at prestigious institutions in India and abroad, in the fields of Pure Sciences, Applied Sciences, Social Sciences and Humanities, Law, Architecture and Management.

***HIGHLIGHTS OF THE SCHOLARSHIPS IN INDIA**

A merit-based interest free loan scholarships programme

Designed for the brightest minds who wish to pursue them postgraduate scholarships for studies in India and abroad

Selected students to be awarded scholarship amount of up to Rs. 20 lakhs as per the assessment of the Foundation

A unique mentoring programme designed for the awardees for nurturing and assisting them in achieving their desired goals

*** ELIGIBILITY CRITERIA**

Indian national, residing in India

Students below 30 years of age

Graduates of a recognized university (Students in the final year of the degree course and those Awaiting results are also eligible to apply) Students planning to pursue postgraduate studies at prestigious institutions from Fall 2014 Students who have applied and awaiting a decision from the university are also eligible to apply but the award of scholarship is subject to securing admission.

The JN Tata Endowment for the Higher Education of Indians:

Loan Scholarship Process

. The J. N. Tata Endowment awards a one-time loan scholarship only at the beginning of the course to Indian nationals for full time Postgraduate/Ph.D./Postdoctoral studies abroad and in

India, in all fields, irrespective of caste, creed, gender or community. The amount to be awarded to each Scholar by way of the loan scholarship is determined on the basis of the norms laid down for the purpose, and does not cover the full cost of studies. The amount awarded as the loan scholarship ranges between Rs.1,50,000/- and Rs.6, 00,000/-. All applicants do not necessarily qualify for the maximum amount. The selected scholars may also qualify for a gift scholarship and travel assistance from our allied Trusts as may be decided at the sole discretion of the Trustees of the concerned Trusts. A gift scholarship can be for a maximum amount of Rs. 10,00,000/- and the travel grant can be a maximum of Rs. 50,000/-.

Eligibility Criteria

. Applicants should be Indian nationals who are graduates of a recognized Indian University, with a consistently good academic record and other achievements to their credit. Students in the final year of the degree course and those awaiting results are eligible to apply. Mid-career professionals up to the age of 45, with a good academic record and experience in their fields for further research, specialization or training may also apply. Candidates need not have the admission/offer letters from the Universities to which they have applied for the academic year 2016-2017 at the time of making the application. Candidates going abroad for seminars, conferences and undergraduate studies are not eligible for the J. N. Tata Endowment Loan Scholarship**.**

NAROTAM SEKHSARIASCHLORSHIP PROGRAM

Scholarship

The NarotamSekhsaria Foundation under its Scholarship Programme awards interest-free loan scholarships to Indian students with a consistently good academic record. The scholarship amount (upto a maximum of Rs.20 lakhs) is decided as per the assessment of the Foundation. The scholarships are awarded to students who wish to pursue their postgraduate studies in the fields of Pure Sciences, Applied Sciences, Social Sciences and Humanities, Law, Architecture and Management at prestigious Indian and international universities.

Eligibility Criteria

Indian Nationals residing in India. Students below 30 years of age. Graduates of a recognized university (students in the final year of a degree course and those awaiting their results are also eligible to apply).Students having sought admission for a postgraduate degree programme at any prestigious university for the fall in take (Those who are awaiting a decision from a university are also eligible to apply. However, the award of the scholarship is subject to them securing admission)

Application Procedure

Applications for the NarotamSekhsaria Scholarships for Higher Studies are invited by the Foundation in the month of January for every academic year. The mode of application is online.

The candidate is required to complete the registration online at http://pg.nsfoundation.co.in. Upon registration, the login credentials will be sent to the registered email ID. Once the registration is complete, an application fee of Rs. 500/- is payable either online through Net Banking or offline by sending a Demand Draft issued in favour of the NarotamSekhsaria Foundation. On receiving the application fee, the candidate will be able to access the form online by logging in with the provided login credentials. Completed application forms should be submitted before the closing date. Only candidates shortlisted for the next round of the selection process are contacted by the Foundation. They are required to produce duly certified supporting documents. The next round of the selection process is the interview round, for which candidates are required to come down to the Foundation's office.

Supporting Documents

1. Mark sheets of Std. X^{th}, XII^{th}, and all years of the undergraduate programme and degree certificates.
2. Score cards of any qualifying examination taken (Eg. GRE, GMAT, CAT, GATE etc.).
3. Copy of the admission letter(s) from the university, if obtained.
4. Reference letters (in a sealed envelope).
5. Statement of the course fee and any other financial document (this would include any other letter indicating the receipt of a scholarship, other source of funding, fee waiver etc.).
6. Attested copy of the passport.
7. One passport size photograph.
8. Latest Income Tax Returns of parents.

Selection Procedure for the Scholarship

All applications will be screened for short listing. Only shortlisted candidates will be informed between the months of April-May. It is mandatory for all the short listed candidates to attend a personal interview in Mumbai in the month of June. *Please note: The interview is the basis for final selection.*

Post Selection Formalities

The Foundation announces the final list of scholars towards the end of June or first week of July.

Documentation

It is mandatory for all the scholars to submit attested copies of the following documents within the timeline as decided by the Foundation:

1. The letter confirming admission to the college/ university for the proposed course of study.
2. I-20 in case of students admitted to the universities in the United States and a copy of the letter highlighting the financial support in case of study.

Scholarships for Indian students aspiring to study abroad.

The past decade has seen a massive increase in the number of Indian students going abroad for higher studies. Earlier the trend was for Indian students to complete an undergraduate degree in India, work for a few years and then go abroad for a postgraduate education. We see positive changes now, as students aspire to even do their undergraduate study abroad and also opt for vocational job-centric courses in Australian TAFE Institutes. The important factors that contribute to the increase in numbers of Indian students going abroad for higher studies are:
Awareness of value of an international
Degree Faster approval of study loans by banks
Increase in number of scholarships
Available this article examines some of the top
Scholarships on offer for Indian students and their brief descriptions.

Aga Khan Foundation International Scholarship Program

The Aga Khan Foundation provides a limited number of scholarships each year for postgraduate studies to outstanding students from developing countries who have no other means of financing their studies. Scholarships are awarded on a 50% grant: 50% loan basis through a competitive application process once a year in June or July. The Foundation assists students with tuition fees and living expenses only. The cost of travel is not included in AKF scholarships. Half of the scholarship amount is considered as a loan, which must be reimbursed with an annual service charge of 5%. A guarantor is required to co-sign the loan agreement. The payback period is five years, starting six months after the study period funded by the Aga Khan Foundation.

Chevening Scholarships

Chevening Scholarships are the UK Government's global scholarship programme, funded by the Foreign and Commonwealth Office (FCO) and partner organizations. The programme makes awards to outstanding scholars with leadership potential from around the world to study postgraduate courses at universities in the UK. The Chevening programme was established in 1983 and has developed into a prestigious international scheme. There are over 42,000 Chevening alumni around the world who together comprise an influential and highly regarded global network. The programme provides full or part funding for full-time courses at postgraduate level, normally a one-year Master's degree, in any subject and at any UK university.

Commonwealth Scholarship and Fellowship Plan

This is one of the most well-known and popular scholarships available to students from Commonwealth countries. In India this scholarship is managed by the Common wealth Scholarships Commission, the British Council and the Government of India. Students aspiring to study courses in Engineering and Technology, Science (Pure and Applied), Agriculture and Humanities and Social Sciences are eligible to apply for scholarships. The preliminary selection of candidates for scholarships is carried out in India by the Ministry of Human Resource Development (MHRD), Department of Education, and Government of India. Eligible applications are verified and short-listed and this is followed by personal interviews of the applicants in New Delhi.

Hornby Scholarships

The A.S. Hornby Educational Trust offers the Hornby Scholarship to students who aspire to study an ELT course in the UK. Applicants need to have an IELTS score of 6.5 or above and should be accepted at an institution in the UK for studying a postgraduate ELT course. Applicants should have at least five years' hands on and direct experience as an English language teacher/teacher trainer. Alternatively, they should have been involved in some sort of developmental work as trainers or managers. The scholarship will cover the tuition fee of the course.

USIEF Scholarships

The United States India Educational Foundation was established to promote academic partnerships between Indian and American universities and provide Indian students the opportunity to study in top American universities. The Tata Scholarship at Cornell University, Brands University Scholarship and The University of California Berkeley Scholarships are some of the popular scholarships offered by USIEF and its partners. Students are also advised to visit the website of the Ministry of Human Development for details of other scholarships that Indian students are eligible to apply and offered in partnership with other governments.

Ms.V.R.Swathi, B.E.,(CSE)

ADMISSIONPROCEDURE FOR FOREIGN UNIVERSITY

With the right kind of planning and guidance, one can study in abroad at very low costs and even free on a scholarship. Application process makes the vital difference and is the most important criteria. A good degree is a stamp of excellence that marks you for life. It can enhance your career and prepare you for leadership in your country or anywhere in the world. Whatever your reason for deciding to study abroad you will find that higher educational broad adds considerable value to your professional development.

A SIMPLE FIVE ADMISSIONPROCESS:

- Understand the requirements
- Take Competitive exams
- Prepare applications
- Submit the application and wait for the decision
- Apply for visa

WELL IN ADVANCE

The application process for studying abroad is time consuming and requires applicants to start preparing well in advance of their anticipated start date. It is very important to begin the admission process early because in many cases application deadlines are far in advance of the start of the semester (sometimes as many as ten months).

STATEMENT OF PURPOSE

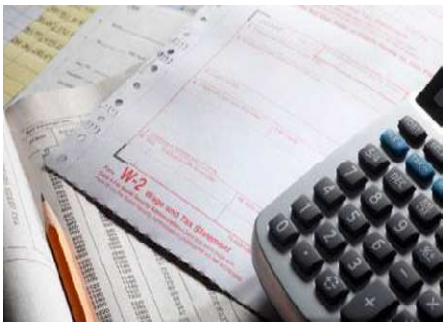
The personal essays, and/or statement of purpose, also play a very important role in the process of evaluating your application for both admission as well as financial aid because it gives the faculty assessing your application their most significant impression of you as an individual. In the statement of purpose, which must be concise, the student must define his or her academic goals, and/or research plans; it should include justification for choosing the academic program and specialization, and for selecting the particular college as well as the advantages and benefit of studying that particular course.

The 6 basic steps for applying abroad are

- Documents
- Reporting Identifying country, universities and the course of your interest
- Request universities for Application forms
- Taking various required tests
- Arranging and preparing Essays and recommendation letters
- Completing and Sending Application forms along with required various test scores to the universities

Competitive exams to get admissions into Universities abroad: Competitive entrance exams including SAT, MCAT, LSAT, GMAT,GRE, IELTS and the TOEFL are required for admission to study universities and colleges in abroad.

WRITE COMPETETIVEEXAMINATIONS



it is the first thing.
Good performances in competitive 'Study Abroad' exams also help you to win scholarships and other forms of financial aid, no small consideration for a majority of the applicants. Some of the most popular, and most important, international entrance exams include the SAT, MCAT, LSAT, GMAT, GRE, IELTS
and the TOEFL. These are required for admission to universities and colleges in various countries across the globe.

TOEFL

The TOEFL is held throughout the year, usually on weekends; for 2012 in India, the TOEFL is to be held only on weekends, both in the metros and the tier 2 and tier 3 cities. The IELTS, conducted by the British Council, is held in 71centers spread all over the country, over four times a month.

GRE

The Graduate Record Examination (GRE) is another popular examination among Indian students aspiring to study in the USA or Canada. It is a fairly standardized test that measures the verbal, mathematical and general analytical skills of the candidate.

SAT

The Scholastic Aptitude Test (SAT) test, required for entry into some university in US if you have not completed an equivalent, is of two types - the Reasoning Test to check the general writing skills and grammar and the Subject Test to check a candidate's knowledge in the subject chosen. The SAT is owned, developed and conducted by the College Board of the United States of America. Within the USA, the SAT is offered seven times a year, generally on the first Saturdays of October, November, December, January, March, May and June. Most other countries follow the same dates. Competitive entrance exams are a standardized and reliable mode of evaluating the millions of applicants who aspire to study abroad every year!

REQUESTING APPLICATIONFORM

This is the first stage of your application process. At this stage, you can write to the selected 25-30 universities. You can directly request application materials from the universities. There are two ways to get application forms:

1. Requesting Application Forms via Email.
2. Downloading from the university website.

Recommendation letter

A recommendation letter is a signed statement from a person who knows you well professionally or has taught you in a subject that is related to the course you are applying to. It should list your positive and negative qualities, strengths and weaknesses, your character and integrity and other such information. The author or teacher must indicate his position, how long he/she has known the applicant and in what capacity. Many universities have their own format and questions that have to be answered by the person who is giving the letter of recommendation on your behalf. Letters, which do not give enough information, can jeopardizea candidate's chances of selection.

Undergraduate

Students who are applying for a Bachelor program or any other undergraduate course would be required to submit a secondary school report and transcripts (report cards) of the final exams. The report form should be filled out by a school official like the principal, counsellor or headmaster.

Graduate

Students applying for Graduate courses (MBA,MS etc) are required to submit an official transcript from each college or university that they have attended after secondary school with complete details of the subjects, credits involved and other details like correspondence courses. If the transcripts are in a language other than English, then it must be translated into English only by the issuing authority or university otherwise it may not be acceptable.

Admission Stage

Universities usually inform students of their admission decisions well in advance of the beginning term. If you have received admission in more than your university, you will have to decide which you want to attend. At this stage, you should compare a few objective and mostly more subjective criteria.

i) Objective Criteria

- Best program curriculum, length of program, choice of courses
- Best funding offers or best program with respect to costs
- Cost of living
- Strength of related departments/program

ii) Subjective Criteria:

- Overall reputation of university/department/program
- Location-region, safety of neighbourhood
- Climate
- Social life
- Facilities available
- Accommodation & housing

Basically the decision factors at this stage would be mainly three points:

- Best program
- Best funding offer
- Best for your personal goals and needs

What to do once you have been accepted:

Each college will tell you exactly what steps to follow to confirm your acceptance of their offer of admission and how to prepare for your first term. This information will be included with the letter of admission or in materials that will be sent to you shortly thereafter. You must respond with a "yes" or "No" for each offer of admission. You may also be required to submit a financial deposit to the institution that you plan to attend. This is to guarantee your place in the class. Make sure you do not miss any deadlines.

• We realize how important it is to have a safe and comfortable place to live. North Wales is considered to be a very safe area to live and study, with friendly, local people who are sure to give you a warm welcome.

If you are in the waiting list:

You may receive a letter that informs you that you are on a 'waiting list'. This generally means that the admission office determined that you were qualified for admission but there was not enough room to admit all qualified applicants. If you are placed in the waiting list of a college you wish to attend, you will be asked whether you are interested or not. If you say yes, you may be offered admission if space becomes available. If you are placed in the waiting list of your first choice college and confirmed in the second choice college, you may do the following steps to remain on the safer side:

Accept the offer of the second choice university and pay the deposit
Accept the offer of remaining in the waiting list of the first choice university
An enjoyable, safe lifestyle for Students:
There are many opportunities to participate in a variety of activities alongside your academic studies, including sports, community activities, and exploring the outstanding country side around our campus. So, there are tremendous ways to study in abroad.

Abstract: This document proposes the ways to follow to get admitted in a university in USA.

INTRODUCTION

The first phase of the admission includes the GRE/GMAT and TOFEL/ IELTS exams. These two exams are the primary gate way to enter. Apart from just appearance in these above mentioned exams, a good score is mandatory in order to choose a good college/university or to get a scholarship. These exams are written in order to apply for an MS or MBA respectively. The exams mentioned latter are to check the English proficiency of the candidate. The ETS **(www.ets.org)** plays a vital role that includes a to z process of admissions.

GRE

GRE is Graduate Record Examination that is exclusively required to get through a university abroad. The number of attempts are endless but the duration between two consecutive appearances is 60 days and the validity of GRE score is 5 years. The colleges take up either the first, last or the average score.

IELTS/TOFEL

These exams are written in order to prove the English learning and understanding capability of a candidate. Here IELTS and TOFEL completely differ from each other. IELTS includes a test for British English whereas TOFEL includes a test for American English. Both comprises of Listening, Speaking, Reading, Writing (LSRW).

CHOOSING THE UNIVERSITY

The major part of the admission process starts from here as the name of the university will be the will be the thing of the day. The universities and colleges are generally ranked under several bases, out of which parameters such as semester fee, availability of hostel within a mile, part

time job availability, accommodation, student to teacher ratio, popularity of the department or specialization, research and placement activities etc.…

TIME OF APPLICATION

The applying process can be done twice a year. In fall (August) or in spring (February). The choice of the period is up to the students. Semester System will have three semesters every year.
• Spring (Jan)• Summer (May)• Fall (August)

PROCEDURE

The application is a pure and complete online process. The procedure can be done only through the respective college websites. The admission process for a season should start nearly 11 on the prior to the date of admission in order to complete the entire process successfully. If online application is not available for a particular university, then download paper application from the university's website. Then send the following documents to university's graduate admission office. Requirements may change from university to university. Visit the university and department website for exact requirements and conditions.

GPA

GPA means Grade Point Average. It is the standard measure of performance of a student in USA. It is similar to the 100%scoring system in India. There is an institution called WES. They will evaluate your transcripts to calculate your GPA and send the reports to universities.

DOCUMENTS REQUIRED FORAPPLICATION

I. DD/Bank check for Application.
II. Recommendation letters.
III. GRE/TOEFL/GMAT/IELTS Score Xerox.
IV. Bachelor's Degree certificate.
V. SSC/10th or Equivalent Certificate
VI. 12th/ intermediate or Equivalent Certificates.
VII. Affidavit and I20 form.
VIII. Photo Copies of first and last pages of your passport.
IX. SOP (Statement of Purpose).
X. Other documents…

STATEMENT OF PURPOSE

Statement of purpose is one of the strongest part of the documents, which decides the career of the candidate. Attempts to copy an SOP may lead to rejection of application.

PASSPORT AND VISA

The passport and VISA are mandatory wherein a special interview has to be attended to get the VISA to the respective country. Hence the process of applying for visa can be done 3 to 4 months earlier, after the admissions have been finalized in a university.

TRAVEL AND PACKAGING

It's better to have a checklist to get ready with all the essential luggage. The transportation shall be arranged through airways prior to the commencement of the college / university. The luggage should meet out the flight requirements compulsorily.

Competitive exams to get admissions into Universities in abroad

Competitive entrance exams including SAT, MCAT, LSAT, GMAT, GRE, IELTS and the TOEFL are required for admission to study universities and colleges in abroad. Thousands of aspirants migrate to various parts of the world every year to complete their higher studies. Whilst the global study abroad scene has opened up tremendously to accommodate students of all academic backgrounds and interests, there are still certain present academic standards that need to be met in order to gain admission to a university or college abroad. These are achieved by clearing competitive international entrance exams. Good performances in competitive 'study abroad' exams also help you to win scholarships and other forms of financial aid, no small consideration for a majority of the applicants. Some of the most popular, and most important, international entrance exams include the SAT, MCAT, LSAT, GMAT, GRE, IELTS and the TOEFL. These are required for admission to universities and colleges in various countries across the globe; at times, the need may be a combination of one or more of these and other tests/examinations specific to that country and its education system.

TOFEL & IELTS

The TOFEL and the IELTS probably top the list with regard to the sheer number of students across the world needing to undertake one or the other to demonstrate English language proficiency. The widest possible selection of universities and colleges accept TOEFL scores, including the top 100 in the UK, U.S, Canada, Australia and New Zealand. The IELTS is a mandatory exam for Indian and other non-native English speakers, especially in the Commonwealth countries, for entry into most reputed universities and colleges overseas, and occasionally for immigration requirements as well. The TOEFL is held throughout the year, usually on weekends; for 2012 in India, the TOEFL is to be held only on weekends, both in the metros and the tier 2and tier 3 cities. The IELTS, conducted by the British Council, is held in 71 centres spread all over the country, over four times a month.

GRE & GMAT

The Graduate Record Examination (GRE) is another popular examination among Indian students aspiring to study in the USA or Canada. It is a fairly standardized test that measures the verbal, mathematical and general analytical skills of the candidate, though the format has undergone quite a few changes over the years. It is an admission requirement for many graduate courses, especially in engineering and the sciences, in the USA. Management aspirants need to take the GMAT, which is an admissions assessment for business colleges. Average GMAT scores are in the range of 570-580; however, for top school admissions a score of at least 700 is almost mandatory. New sections have been introduced recently, such as Integrated Reasoning, which have made the test more competitive than before.GRE and GMAT tests are available throughout the world in more than 500locations, though you will have to book your slot in advance.

SAT

The Scholastic Aptitude Test (SAT)test, required for entry into some universities in the USA if you have not completed an equivalent, is of two types- the Reasoning Test to check the general writing skills and grammar and the Subject Test to check a candidate's knowledge in the subject chosen. The SAT is owned, developed and conducted by the College Board of the United States of America. Within the USA, the SAT is offered seven times a year, generally on the first Saturdays of October, November, December, January, March, May and June. Most other countries follow the same dates.

MCAT & LSAT

Other competitive study abroad examinations include the MCAT and the LSAT, mandatory for getting into medicine and law respectively in the USA. The MCAT is a multiple-choice test that is designed to evaluate the examinee's aptitude and knowledge about relevant subjects, while the LSAT that is administered by the Law School Admission Council for students who wish to pursue a career in law in the USA, Australia and Canada.

List of admission tests to colleges and universities

This is a list of standardized tests that students may need to take for admissions to various Universities and Colleges. Tests of language proficiency are excluded here. Only tests not included within a certain secondary schooling curriculum are listed. Thus, those tests initially focused on secondary-school-leaving, e.g., GCE Alevelsin the UK, or French Baccalaureate, are not listed here, although they function as the de facto admission tests in those countries.

Australia

- STAT – Special Tertiary Admissions Test, aptitude test for non-school leavers
- UMAT – Undergraduate Medical Admissions Test, required for undergraduate entry to many Australian and New Zealand undergraduate-entry medical and dental schools
- GAMSAT – Graduate Australian Medical School Admissions Test, required for graduate entry to many Australian graduate-entry medical and dental schools
- PQA – Personal Qualities Assessment, required for entry into health sciences, including undergraduate Medicine, for a growing number of Australian universities
- GAT – General Achievement Test (VCE Students - Victorian Certificate of Education)

United States (and Canada)

- SAT – formerly Scholastic Aptitude Test
- SAT Subject Tests
- ACT – formerly American College Testing Program or American College Test
- THEA – Texas Higher Education Assessment
- GED – High School Diploma Equivalent
- PERT – Replaced Accu placer as the standard college placement test in Florida
- CAEL – Canadian Academic English Language Assessment

Competitive entrance exams are a standardized and reliable mode of evaluating the millions of applicants who aspire to study abroad every year, so take your time, prepare well and get ready to go places.

International Entrance Exams

A study abroad program for higher studies has always been considered as an enriching and challenging experience. Along with a rewarding career, students also get an experience about new cultures, customs and ideas that help in molding their personalities. Thus, the reason why hundreds of aspirants migrate to various parts of the world to complete their higher studies goes way beyond academics. To get admission into an American university or that of other countries, you need to clear international entrance exams. Sometimes, you not only appear for these exams entrance to these elite institutes but also to win scholarships. The amount of funding you get also depends upon your performance. Therefore, it is very important to get a good score. There are a plethora of international entrance exams such as **SAT, MCAT, LSAT, GMAT, GRE etc. that cater to different educational courses.** ***MOST POPULAR INTERNATIONALENTRANCE EXAMS TO ENTER INTO THEABROAD COLLEGES:***

Listed below are the most important international examinations that secure green cards for the students seeking admission in offshore courses.

SAT,MCAT,LSAT,GMAT,GRE,IELTS,TOEFEL

SIGNIFICANCE

Depending upon the level and course of study, students need to take up a few tests for entry into academic programs abroad such as **TOEFL, IELTS** (English proficiency tests) and **GRE,**

GMAT or MCAT

- Each of the above mentioned exams have different test formats, scoring patterns and thus require different preparation strategies.
- International entrance exams are a uniform, standardized and reliable mode of evaluating applicants.
- Every year millions of students, all over the world, send in their applications to foreign universities. It is on the basis of this performance that a deserving few are chosen.
- Select your area of interest, university of choice and the application procedures.

Admissions Requirements for Post Graduate Courses

- Students who are seeking admissions for post graduate courses need to have a graduate degree of **3 years'** duration in any stream equivalent to the foreign university bachelor degree. Alternatively, students who have successfully completed the undergraduate course in abroad countries can also apply for the post graduate admissions. For admission in few post graduate courses, four year degrees like **B.E. or B.Tech** may be required as these are considered equivalent to foreign university bachelor's honors degrees. Successful completion of several Indian master's degrees like **M.A.** and **M.Sc**. are also accepted for post graduate admissions in foreign universities.
- Admission forms can be obtained from the respective university's website, filling them and either submitting them online or through posts. The form need to be supplemented by the complete details of the students' previous academic records from the respective universities or institution. All the details, attested by the registrar, have to be provided.
- If the student has completed the undergraduate course from a non-UK country, then he / she will have to take the **IELTS** English proficiency exam conducted by the British

Council or the **TOEFL** exam. If convinced that the student's medium has been English throughout, some universities may waive these tests. All international students who want to enrol themselves in a post graduate management course have to take the **Graduate Management Admission Test (GMAT)** and score well in it. Without a good **GMAT score** (700 or more for top universities), admission in management based courses are hard to accept by foreign universities. All universities require complete transcripts/mark sheets/related documents of the previous academic records to be submitted at the time with the application forms along with the letter of recommendation and a statement of purpose.

Mr.K.K.Raghul,B.E.,(CSE)

APPLICATION PROCEDURE FOR FOREIGN UNIVERSITY-WHY STUDYABROAD

No two applicants have the same reason(s) for studying abroad. For one it could be as simple as not getting into the right college/university in India and for the other it can be because there are not very many job opportunities in his/her field of study and for many, an easy way of a secured future. Whatever your reason for deciding to study abroad you will find that higher education abroad adds considerable value to your professional development. A good degree is a stamp of excellence that marks you for life. It can enhance your career and prepare you for leadership in your country or any wherein the world. It can broaden your horizons and expose you to a variety of perspectives, the latest technology, and state-of-the-art research and training. You can make contacts with colleagues abroad which may lead to collaborations with leading international researchers after you return to your home country. With the large number and variety of colleges and universities outside India, you are certain to find one that matches your needs and interests, no matter what your criteria. And what's more, with the right kind of planning and guidance, you can study abroad at very low costs and even free on a scholarship. Application process makes the vital difference and is the most important criteria.

APPLICATION PROCESS

The application process for studying abroad is time consuming and requires applicants to start preparing well in advance of their anticipated start date. It is very important to begin the admission process early because in many cases application deadlines are far in advance of the start of the semester (sometimes as many as ten months). You also need to allow time for scheduling any standardized tests needed for admission and then having the results of these tests sent to schools. There is no uniform world-wide application system. Each college or university establishes its own unique policies.

The 6 basic steps for applying abroad are:

- Identifying country, universities and the course of your interest
- Request universities for Application forms
- Taking various required tests
- Arranging and preparing Essays and recommendation letters

- Completing and Sending Application forms along with required documents
- Reporting various test scores to the universities for a detailed and printer friendly format calendar and checklist of applying abroad process to help you with your college admissions planning.

SELECTING UNIVERSITIES

Selecting universities is a very time consuming and important process not only from the admission point of view but also because applying to universities are very expensive by Indian standards. Hence it has to be restricted to around 6or 8 universities which are best matched for your requirements. The best university for you may not be the famous ones, but those that offer you your field of study as well as meet the other criteria important to you. The range of academic options as well as available universities are so wide that it is not possible to select the best in one go and it may take some time. The basic steps involved in the process of selecting universities are:

Level	Criteria for short listing	Number of colleges Shortlisted
I	Self-Evaluation	**50**
II	1. Academic Eligibility 2. Academic Record (Grade point Average) 3. Standardized Test Scores 4. Financial Aid Considerations 5. Other issues	**25-30**
III	Application Stage(After receiving prospectus & forms)	**6-8**

Self-Evaluation (Level-I)

The first step is identifying your goals and needs which can be done by self-evaluation.

A - Identify your reasons for pursuing higher education abroad

. Are you motivated by career goals, job prospects, academic interest, and personal satisfaction?
. What particular specialization are you interested in?

It is important to match your objectives with what the universities offer. If your aim is research in some particular field, you should apply to universities with specialized departments in that field. If you are interested in practical experience, you should apply to universities located close to the commercial centres and important cities.

B - Realistically assess your academic and professional background

- Are you a competitive student?
- Are you dedicated and hardworking?
- How good is your academic record?
- Do you have any work experience or research work related to your field of study?
- Do you have any credentials in extracurricular activities?

Only if you have a good academic background, you should apply to highly ranked universities. If you feel you are moderately placed, you should apply to mid ranked universities.

C - Get an academic focus

- Do you have a relatively clear idea of your field of study?
- Have you spoken to your professors, read journals to know more about your field and other new fields?

Education abroad is very different from education in India. Most universities abroad have a very flexible system where you can select your courses and focus more on your field of interest.
There are also many specialized courses which may suit your needs.

D - Realistically assess your financial abilities

- Will you get a financial assistance from the university?
- Can you or your family finance your education and stay?
- Do you have an overseas sponsor?
- Are you eligible for funds from educational trusts?

The application process itself costs about Rs. 25,000 - Rs. 30,000/- towards examination fees, postage, university application fees etc. Tuition and living expenses are also high and depend on the country you wish to study in. For a visa, you must be able to demonstrate your ability to fund your education and stay abroad.

Level-II

It is best to narrow down your choice to 25 - 30 universities after this stage by looking at the following:

- Program Offerings (B.A, B.S, B.E, M.S, M.B.A, D.A, Ph.D., etc.)
- Specialization, faculty, thrust of the programs
- University Rankings
- Program Length
- Cost -- Tuition, living expenses etc.
- Availability of Financial Assistance to International Students
- Entrance Requirements (Bachelor degree in same field, work experience etc.)
- Tests (SAT, GMAT, TOEFL etc. and minimum scores)
- Accreditation status(Professional accreditation for some programs)
- Student Profile (Percentage of international students, average work experience levels, etc.)
- Enrolment -- Total available seats and the size of the school
- Location (Country, climate, semi-rural, metropolitan city etc.)
- Facilities -- Library, housing, student associations etc.
- Type of Institution -- Public or Private these are the usual criteria. You could prioritize your criteria out of this list and shortlist the number of universities on that basis to about 30. You could further shortlist your choice on basis of specific issues like tuition fees, availability of financial etc.

Here we give some details of most important criteria for selecting universities -- academic eligibility, standardized tests, Grade Point Average and Financial Aid.

1. Academic Eligibility

Each university and college has its own requirements for admission. There is considerable flexibility in the acceptance policies of most schools. The requirements are different for different countries.
We list here the most common requirements:

Graduate & Postgraduate Programs (M.A, M.S, M.B.A etc.)

CANADA & U.S.A.

Most Universities require qualifications comparable to a U.S. Bachelor's degree (Four Year Degree Program). A minimum of 16 years of formal education. In Indian context, it implies either qualifying in professional 4 years course like engineering or other such courses. If you have completed a 3-year degree program in India, the advisable plan of action to maximize eligibility for U.S. and Canadian graduate schools is to apply for a Post Graduate degree here in India. A one-year university affiliated program will make up for the fourth year of a U.S. Undergraduate degree.

AUSTRALIA & NEW ZEALAND& U.K.

Most New universities accept the Indian graduation system of three years for entry into most post graduate courses. An Indian bachelor degree like B.A., B.Com. Or B.Sc. is equivalent to a Bachelor (Ordinary) Degree. However, some courses and universities may require a qualification equivalent to Bachelor(Honours) Degree in these countries, which require 16 years of formal education, which would mean another year after graduation or a four-year degree course like B.E., B. Tech or other such courses' Confirmation can only be obtained by either writing directly or formally applying to the universities concerned. However, for most Universities, a good first degree from a leading university in India or its equivalent is essential.

2. Academic Record and Grade Point Average

Your past academic record is one of the most important deciding factors in getting admission to a college abroad. Most schools require you to have a reasonably good academic record especially for programs and courses offering a master's or doctoral degree. Each university has its own minimum requirement for its programs, which are flexible depending on the candidate profile. Universities in each country have their own marking and evaluation systems, which are considerably different from the Indian system. For e.g., U.S. follows the GPA (Grade Point Average) system which are based on 5 points scheme - A,B, C, D & F. It is advisable not to convert your marks in the Indian system of grading to the American Grade Point Average system or any other system since the conversion may not be accurate. You may attach an explanatory note from your college to indicate your rank in your class and/or university. The letter may also indicate your place as compared to the class and the university average and the number of students in the class and the number of colleges and students in the university. You may also provide any other information or documents that you feel may help you in the admission process.

3. Standardized Test Scores

Every university has its own minimum requirements and scores with respect to standardized tests. Check out the requirements of the universities and short-list the ones that will accept your scores.

English Proficiency Tests

Fluency in English is mandatory for education abroad whether in U.S., U.K. or any other country. You would be required to take tests like TOEFL, IELTS, TSE or other tests depending on the country, university and program you are applying to. The minimum scores required in these tests vary depending on the college and program. Individual departments and colleges usually set their own minimum requirements for admissions.

Other Tests

Different programs and colleges require you to take certain standardized tests for admission and there is a certain minimum that you have to score in those tests to get admitted to those universities. For a management graduate course, you are supposed to take GMAT and similarly for a graduate course in engineering, you are supposed to take GRE. For undergraduate courses, one has to take SAT.

4. Financial Aid

Most Indians are concerned about the high cost of education abroad and seek information on opportunities for financial assistance. The expenses for education abroad include tuition fees, living expenses, health insurance, transportation etc. This is an important criterion for selecting the courses as well as universities. It is important to understand that most universities offer financial assistance to international students based primarily on merit and rarely on need. The amount, and type of assistance offered varies based on the university, department and level of study. Assistance of funds is more likely in Graduate studies and less in Undergraduate courses. Similarly, chances of assistance are more in specific countries like U.S.A. and U.K. Also funds are more likely to be available in fields like Engineering, Physical Sciences and Biological sciences, rather than in courses like Humanities, Social Sciences and Management.

Application Stage (Level III)

Once you start receiving application forms and material, go through in detail for the various requirements and deadlines like the application deadline, minimum scores required in the standardized tests, recommendation letters needed and other such information. This is the first stage of your application process. At this stage, you can write to the selected 25-30 universities. You can directly request application materials from the universities. There are two ways to get application forms:

1. **Requesting Application Forms via email:** You can request application forms from the universities website. Most universities have a form on their website which can be completed online to request application material.

2. **Downloading from the university website:** Many universities have a downloadable and ready to print versions of their application forms on the net. These can be used for applying just as regular forms.
Tabulate all these requirements and compare them with your objectives and group the universities under three categories:
1. Schools that seem to match your requirements
2. Schools are not suited to your needs
3. Schools that do not completely fit in any of the above two categories

Admission Stage (Level IV)

Universities usually inform students of their admission decisions well in advance of the beginning term. If you have received admission in more than one university, you will have to decide which one you want to attend. At this stage, you should compare a few objectives and mostly more subjective criteria. The points you should focus on:

Objective Criteria

- Best program curriculum, length of program, choice of courses
- Best funding offers or best program with respect to costs
- Cost of living
- Strength of related departments/program

Subjective Criteria

- Overall reputation of university/department/program
- Location-region, safety of neighbourhood
- Climate
- Social life
- Facilities available
- Accommodation & housing Basically the decision factors at this stage would be mainly three points:
- Best program
- Best funding offer
- Best for your personal goals and needs. It is essential to do a lot of research on the universities and their offerings. Colleges and universities offer varied educational packages. You will have to find out which of these are likely to meet your goals by spending time in the reference library. The more time and effort you put in and the better you utilize your researching skills, the greater are your chances of achieving your goals.

What to do once you have been accepted

Each college will tell you exactly what steps to follow to confirm your acceptance of their offer of admission and how to prepare for your first term. This information will be included with the letter of admission or in materials that will be sent to you shortly thereafter. You must respond with a "Yes" or "No" for each offer of admission. You may also be required to submit a financial deposit to the institution that you plan to attend. This is to guarantee your place in the class. Make sure you do not miss any deadlines.

If you are in the waiting list:

You may receive a letter that informs you that you are on a 'waiting list'. This generally means that the admission office determined that you were qualified for admission but there was not enough room to admit all qualified applicants. If you are placed in the waiting list of a college you wish to attend, you will be asked whether you are interested or not. If you say yes, you may be offered admission if space becomes available. If you are placed in the waiting list of your first choice college and confirmed in the second choice college, you may do the following steps to remain on the safer side:

1. Accept the offer of the second choice school and pay the deposit
2. Accept the offer of remaining in the waiting list of the first choice school

If you get admission later in your first choice school, you can join that but you will have to forfeit your deposit (usually around US $50-$500) otherwise you can decide to study in the second choice school.

Applying for student visa

Each country has its own procedure for visas. For more details, check out the requirements and formalities of each country:

- Visa – Canada (http://www.infozee.com/canada/visa.htm)
- Visa - New Zealand (www.infozee.com/nz/visa.htm)
- Visa -U.K. (www.infozee.com/uk/visa.htm)
- Visa - U.S.A (www.infozee.com/uk/visa.htm)
- Visa – Australia (www.infozee.com/australia/visa.htm)

Dr. S. Miruna Joe Amali, ASP/CSE

Ms. G. Saranya, AP/ CSE

GRADUATE APPTITUDE TEST FOR ENGINEERING

Many of them who are going finish engineering would think about writing GATE exam. For that we must know about it.

About GATE exam:

The Graduate Aptitude Test in Engineering (GATE) is an all India examination that primarily tests the comprehensive understanding of various undergraduate subjects in engineering and science. GATE is conducted jointly by the Indian Institute of Science, Bangalore and seven India Institute of Technology (Bombay, Delhi, Guwahati, Kanpur, Kharagpur, Madras and Roorkee) on behalf of the National Coordination Board –GATE, Department of Higher Education, Ministry of Human Resources Development (MHRD), and Government of India. The GATE score of a candidate reflects the relative performance level of a candidate. The score is used for admissions to various post-graduate programs (e.g. Master of Engineering, Master of Technology, and Doctor of Philosophy) in Indian higher education institutes, with financial assistance provided by MHRD and other government agencies. Recently, GATE scores are also being used by several Indian public sector undertakings (i.e., government owned companies) for

recruiting graduate engineers in entry-level positions. It is one of the most competitive examinations in India.

Eligibility to attend GATE exam:

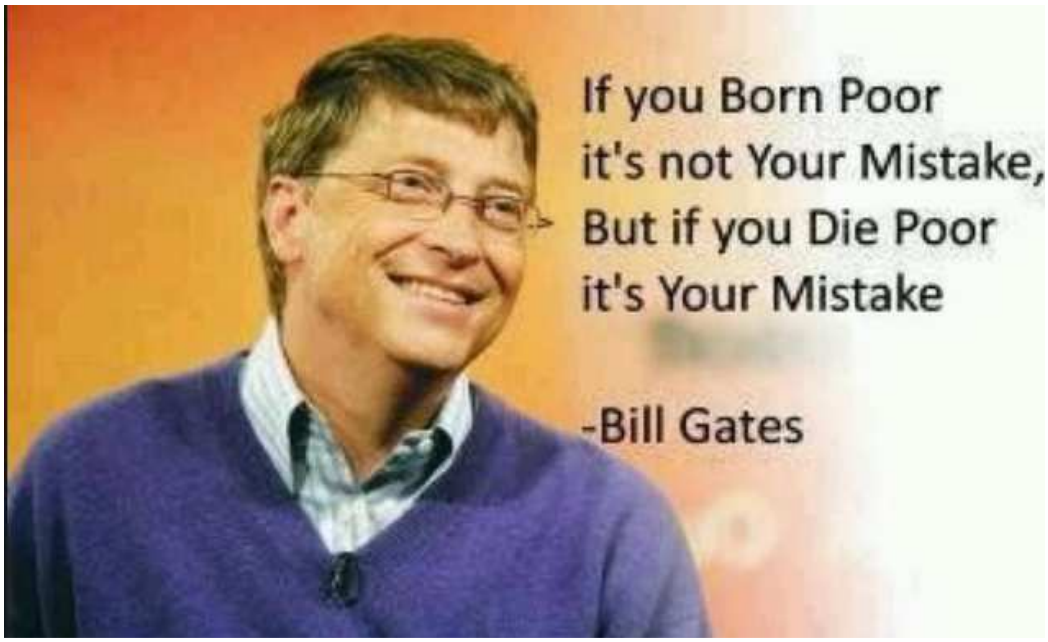
The following are eligible to take GATE:

Bachelor ‘s degree holders in Engineering/Technology/ Architecture (4 years after 10+2/Post B.Sc./ Post-Diploma) and those who are in the final year of such programs. Master‘s degree holders in any branch of Science/Mathematics/ Statistics/ Computer Applications or equivalent and those who are in the final year of such programs. Candidates in the second or higher year of Four-year Integrated Master‘s degree programs (Post-B.Sc.) in Engineering/ Technology. Candidates in the fourth or higher year of Five-year Integrated Master‘s degree programs or Dual Degree programs in Engineering / Technology. Candidates with qualifications obtained through examinations conducted by professional societies recognized by UPSC/AICTE (e.g. AMIE by ie. (i), AMICE (i)by the institute of Civil Engineers (India)-iCE(ii)) as equivalent to B.E./B.Tech. Those who have completed section A or equivalent of such professional courses are also eligible.

Gate exam Disciplines:

I. Aerospace Engineering II. Geology and geophysics
III. Agricultural Engineering IV. Instrumentation Engineering
V. Architecture & planning VI. Mathematics
VII. Bio Technology VIII. Civil Engineering
IX. Mechanical Engineering X. Mining Engineering
XI. Metallurgical Engineering XII. Chemical Engineering
XIII. Computer science and IT XIV. Physics
XV. Chemistry XVI. Production &industrial Engineering
XVII. Electronics &Communication XVIII. Electrical Engineering
XIX. Textile Engineering & Fiber science XX. Ecology & evolution
The examination is of 3 hours’ duration, and contains a total of 65 questions worth a maximum of 100 marks. The question contains both multiple choice question and numerical answer type. There is no negative mark for numerical answer.

Mr. K.R.Raghul, B.E.,(CSE)


If you Born Poor
it's not Your Mistake,
But if you Die Poor
it's Your Mistake
-Bill Gates

Program Outcomes (POs)

Computer Science and Engineering Graduates are able to

PO1: Engineering knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.

PO2: Problem analysis: Identify, formulate, research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, sciences.

PO3: Design/development of solutions: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.

PO4: Conduct investigations of complex problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

PO5: Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.

PO6: The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.

PO7: Environment and sustainability:Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

PO8: Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

PO9: Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams,and in multidisciplinary settings.

PO10: Communication:Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentationnand give and receive clear instructions.

PO11: Project management and finance:Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

PO12: Life-long learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

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