

# GLOBAL

## T I M E S

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by the Entrepreneurship Development Cell



## Editorial

Welcome to the Global Times edition of the bimonthly magazine of Global Nature Care Sangathan's Group of institutions. I am really proud and exuberant to acclaim that we are ready with all new hopes and hues to bring out the Volume Ninth October 2019 , which is going to surely unfold the unraveled world of the most unforgettable and precious moments of the Institution. I am very thankful to honorable chairman Mr. Saurabh Baderia of Global Group for providing me this opportunity.

The magazine is to be viewed as a launch pad for the student's creative urges to blossom naturally. As the saying goes, mind like parachute works best when opened. This humble initiative is to set the budding minds free allowing them to roam free in the realm of imagination and experience to create a world of beauty in words. The enthusiastic write ups of our young writers are indubitably sufficient to hold the interest and admiration of the readers. This souvenir is indeed a pious attempt to make our budding talents give shape to their creativity and learn the art of being aware because I believe that our success depends upon our power to perceive, the power to observe and the power to explore. I am sure that the positive attitude, hard work, sustained efforts and innovative ideas exhibited by our young buddies will surely stir the mind of the readers and take them to the surreal world of unalloyed joy and pleasure. We have put in relentless efforts to bring excellence to this treasure trove.

The college is an incarnation of self-respect, love, affection, sensibility; responsibility and compassion which puts the students into a “State of flow” and makes them genuinely wan to learn. We recognize, appreciate, applaud and foster the fine blend of sensibilities in a student changing a negative outlook from drab and demoralized to bright and expectant. This college attains its eminence in the first place through the achievement of their students. The magazine also espouses the college spirit which is built up within the college through the collective actions, thoughts and aspirations. All these, I believe would spur higher growth and enterprise in students. It gives me immense pleasure to ensure that this magazine has successfully accomplished its objective. The reflection of the students' creativity and achievements is the epitome of the magazine. I take the opportunity to thank all the contributors as their contribution is the reason that makes this magazine endearing with our readers.

**Prof. Manish Tiwari**

(HoD Department of Civil Engineering)



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## DIGITAL MARKETING- A BOON FOR WOMEN ENTREPRENEURS

Businesses today are either digital or becoming digital. With the massive reach and use of the world wide web in social media, content marketing and SEO today, pitching a strong and long time presence for your business with digital marketing has become essential. A strong online presence and using social media is considered a valuable asset for almost any business. However, for any business one needs to make sure that it delivers a reasonable rate of return on the time and resources. Women today are making their mark and presence felt in almost every field. They have realized the importance of marketing and how it could contribute to making their venture successful. Below is a vital checklist that should be followed to avail successful digital marketing results for one's ventures.

1) While building a website make the site user friendly as well as women friendly with soft colors, content related to beauty, maternity, health and shopping in the blogs, promotions, menu etc. Above all ensure that it is a quality site which is compatible as a mobile site, and that it opens up quickly within seconds.

2) The business presence should be felt in social media through channels like Facebook, Twitter, LinkedIn, Instagram, and Google plus. Post vital updates and business related posts in these channels to your followers. This will help in keeping current customers entertained, gaining new followers and engaging with followers.

3) Build a quality SEO (Search engine optimisation) for your website. It takes at least few months for a quality SEO to send real traffic and visitors, and to get rankings and produce results.

4) Create or add a blog for your business that features updates like offers, announcements, and us6) Join in your business related groups and engage your business in discussions on LinkedIn groups, women oriented forums at your preferred business area.7) Take advantage of free local business directories. Take some time to submit your business details in each of them as they will help you in getting amazing rankings in google. <https://moz.com/local> is an amazing source for nice local business directories..

8) Email marketing- Try to build a good email list and update your subscribers with latest company news and offers. Get new visitors to signup for your newsletters. Email newsletters bring more relevant customers. Avail use of free email marketing tools like mail chimp, etc.

9) Opt for Paid Advertising which ensures guaranteed results instantly at various platforms like Google, Facebook etc.

10) If you want to advance your business further, Opt for a mobile application. Developing Mobile Applications for businesses is a growing trend nowadays in the digital world. Launch a mobile application for iPhone and Android phones if your business is suitable for mobile transactions and mobile engagements. This will get you a huge audience of people using mobile phones. For example flipkart, Amazon, Myntra enables mobile purchase of products through their mobile applications. Make them available at App store and Google Play.

*Try allocating more effort, time and money to digital marketing apart from normal marketing strategies.*

### Conclusion

The Indian woman of today is harnessing the digital advantage to maximize their potential to realize the goal of a Digital India. Being a women Entrepreneur and finding success in today's competitive world, in whatever field is a huge challenge. What works and what doesn't is determined by the right combination of form and relevance according to the customer experience. In the modern marketing landscape, the internet with social media allows you to reach almost anyone, no matter what industry a person belongs to, depending on how you posture yourself through marketing. There's huge opportunity, but equally large risks too. Digital India a scenario which we image as the everything on net quick and steady. there are many advantages of digital India as it will create employment; increase in literacy rate ; increase in the economy ; transparency in government functioning; decrease in corruption; quick judgment in the law sector and increase in women empowerment as the online business may be promoted by women; but for a digital India we need to have a system where such things can be established ..Today no doubt one third population of India have mobile phone and of which 75% have internet ...but what about the remaining people ..People of old age and ancient time are not capable to handle the mobile system and android phone how the government will train them? net neutrality proposal is rejected by major net providers at such case will it be able for the people to use the net at the rate the company is provided there may also be problem of network or no range in many areas at that time people may suffer some loss....thus before the proposal of digital India a need for net neutrality and a government net connection accessible to all is needed.

*The Digital India programme is a flagship programme of the Government of India with a vision to transform India into a digitally empowered society and Knowledge economy."*

**Dr.Mita Ashish Shah**

*In charge Entrepreneurship Development Cell and Women's Empowerment Cell GNCSGI*



## MATERIALS FROM WHICH PYRAMIDS MADE

Giza lies outside of Cairo, Egypt, and is home to one of the most iconic structures of early civilization on earth, the Pyramids of Giza. These magnificent pyramids are the most famous of all of Egypt's pyramids, largely because of the scale of their construction, which occurred from about 2550 to 2459 BC. This period was the time when human civilization was not developed especially in masonry. The Pyramids of Giza are the oldest among the Seven Wonders of the Ancient World. The materials used to build the pyramids includes limestone, pink granite, basalt, and mud bricks.

### Limestone

Limestone was one of the materials used to build the Pyramids of Giza. It formed the bulk of the materials used in the construction of the pyramids and rough limestone was utilized in the core of the pyramid. White limestone, which is finer, was used to coat the interior walls and as the main material for the outer casing. The low-grade limestone that was used in the core of the pyramids is found huge quantities in Egypt, and it was found near the building sites during the pyramid construction era. Workers extracted the stone in blocks by marking out crevices with just enough room for them to be cut into blocks and transported to the sites. Tools used in this case included chisels, pickaxes, and hammers made from granite.

### Pink Granite

The granite was used in conjunction with limestone to cover the interior walls of the pyramids though much more sparingly since it was distributed in several parts of South of Egypt and was not as close as the limestone quarries were to the building sites.

### Basalt

Basalt is also known as alabaster and it was often used to cover the floor of the pyramid. It was extracted from open pits or underground deposits, particularly from an Oligocene flow where there was once a lake that connected to the Nile. During this time the basalt was transported on the lake and into the Nile to its shores where it was moved to the construction site of the pyramids



**Kratagya Jain**  
(C.E. 6th Sem.)

## THE FALKIRK WHEEL



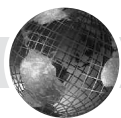
**The Falkirk Wheel is the world's first and only revolving boatlift.** The Wheel forms the centerpiece of an ambitious and successful project to restore the canal network of central Scotland. It connects the Forth & Clyde and Union Canals.

It is 35m high, and all the structures are founded on large diameter bored piles taken into bedrock. Boats approaching from the Union Canal (which is 11m higher) progress through a 168m long tunnel that emerges at the start of a 104m high concrete aqueduct. The far end of this opens directly into the upper of the two "gondolas" of the Falkirk Wheel. The Wheel then rotates, and boats in the upper canal are transferred to the canal below. Care is taken to maintain the water levels on each side, thus balancing the weight on each arm. According to Archimedes' principle, floating objects displace their own weight in water, so when the boat enters, the amount of water leaving the caisson weighs exactly the same as the boat. Up to eight boats can be carried at any time. Each gondola contains nearly 300 tonnes of water. But because the gondolas are always in balance, moving them takes only 1.5KW of electricity and this is provided by a group of ten hydraulic motors in the central spine. The wheel has 1,200 tonnes of steel and was fabricated off-site before being painstakingly fitted together on-site to an accuracy of 10mm. Normal welded joints would be susceptible to fatigue, therefore the steel sections were bolted together. Thus over 15,000 bolts were matched with 45,000 bolt holes and hand-tightened!



**Saurabh Rajak**  
(C.E.6th Sem.)





## GRAPHENE

*Graphene is an atomic-scale hexagonal lattice made of carbon atoms.*

Graphene is an allotrope of carbon in the form of a single layer of atoms in a two-dimensional hexagonal lattice in which one atom forms each vertex. It is the basic structural element of other allotropes, including graphite, charcoal, carbon nanotubes and fullerenes. It can also be considered as an indefinitely large aromatic molecule, the ultimate case of the family of flat polycyclic aromatic hydrocarbons

### Properties :-

Graphene has a special set of properties which set it apart from other allotropes of carbon. In proportion to its thickness, it is about 100 times stronger than the strongest steel. Yet its density is dramatically lower than any steel, with a surfacic mass of 0.763 mg per square meter. It conducts heat and electricity very efficiently and is nearly transparent

### Production of graphene :-

A rapidly increasing list of production techniques have been developed to enable graphene's uses in commercial applications

#### 1.Roll to roll:-

In 2014 a two step roll to roll manufacturing process was announced. The first roll to roll step produces the graphene vapour deposition. The second steps bind the graphene to a substrate

#### 2.Cold wall:-

Growing graphene in an industrial resistive heating cold wall CVD system was claimed to produce graphene 100 times faster than conventional CVD systems, cut costs by 99% and produce material with enhanced electronic qualities

#### 3.Nanotube Slicing:-

Graphene can be created by opening carbon nanotubes by cutting or etching. In one such method multi-walled carbon nanotubes are cut open in soln.by action of potassium permanganate and sulphuric acid

#### Uses of graphene :-

There are following uses of graphene are as follows :-

- 1.Anti corrosion coatings and paints
- 2 Efficient and precise sensors
3. Faster and precise electronics
4. Flexible devices
- 5.efficient solar panels



**Ankush Singh**  
(M.E.3rdSem.)

## BIRD'S NEST



The extraordinary Beijing Olympic Stadium is often called Bird's Nest. This magnificent, bold and innovative piece of architectural design successfully combines aspects from China's past and present.

The weight of the structure was estimated based on the numbers discussed in Sheelagh Matthews' book "Structural Wonders Beijing National Stadium". The total dead, vertical live and lateral live loads were 45,000 tonnes, 11,625 tonnes and 3,090 tonnes respectively. The stadium was designed with earthquake loads taken into account, because Beijing is prone to seismic events. The outer steel structure is completely separate from the inner stadium seating area and is placed 50 feet apart. This placement allows the two structures move independently in case of an earthquake. 24 trussed columns encase the inner bowl, each one weighing 1,000 tonnes. Due to their weight, no crane was strong enough to lift the columns into place when construction of the stadium's steel outer shell began. As a result, the columns were shipped in parts to Beijing and assembled in position. After all 24 columns were in place, smaller beams were welded between to give the structure greater strength and enhance the elliptical crosshatch appearance. Bird's Nest is also designed to withstand earthquakes rated 8.0 on Richter scale.

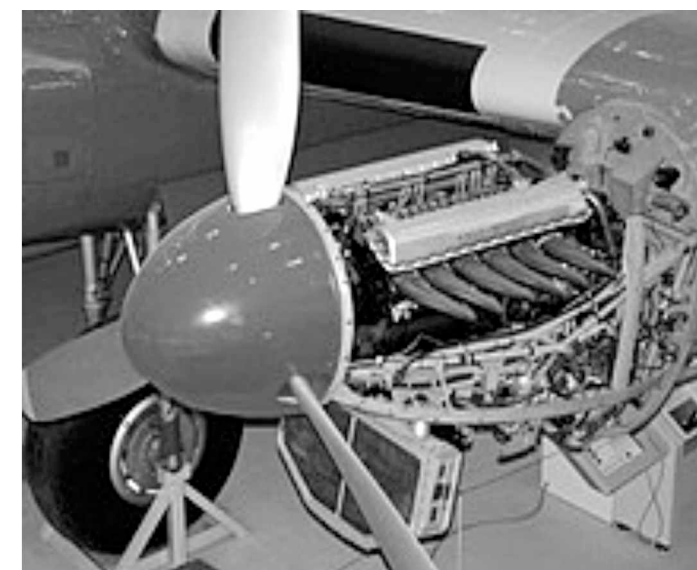


**Ashmita Gupta**  
(C.E.2nd Sem.)

## V12 ENGINE

A **V12 engine** often just called a **V12** is an internal combustion engine with 12 cylinders. The engine has six cylinders on each side called banks. The two banks form a "V" shaped angle. In most engines, the two banks are at a 60° angle to each other. All twelve pistons turn a common crankshaft.<sup>[1]</sup> It can be powered by different types of fuels, including gasoline, diesel and natural gas.

Each cylinder bank is basically a straight-6. This set-up has perfect balance no matter which V angle is used. A V12 engine does not need balance shafts. A V12 angled at 45°, 60°, 120°, or 180° from each other has even firing and is smoother than a straight-6. This provides a smooth running engine for a luxury car. In a racing car, the engine can be made much lighter. This makes the engine more responsive and smoother. In a large heavy-



duty engine, a V12 can run slower, and prolonging engine life.

### Aviation

Rolls-Royce Merlin engine in an Avro York

V12 engines were first used in aircraft. By the end of World War I, V12s were popular in the fighters and bombers. Many Zeppelins had V12 engines. The Rolls-Royce Merlin V12 powered the Hawker Hurricane and Supermarine Spitfire fighters that played a vital role in Britain's victory in the Battle of Britain. The long, narrow configuration of the V12 contributed to good

aerodynamics, while its exceptional smoothness allowed its use with relatively light and fragile airframes. After World War II, V12 engines were mostly replaced by turbojet and turboprop engines. These engines produced more power for their weight, and fewer problems in large aircraft.

### Road car

1931 Cadillac Series 370 A Coupé V12

In cars, V12 engines are not common because of their complexity and cost. They are normally found only in high-end sports cars and luxury cars. For these cars, they are desired for their power, low vibration, and distinctive sound. Before World War II, V12 engines were found in many luxury cars. In the 1930s, V8 engines started to replace the V12s. The V8 engine design was improved to make it lighter and produce



more power than the V12. Since World War II, only a few car manufactures have used V12 engines. In 1997, Toyota equipped their Century Limousine with a 5.0 L V12, making it the first Japanese production passenger car with a V12. In 2009, China FAW Group Corporation equipped their Hongqi HQE with a 6.0 L V12, making it the first Chinese production passenger car so equipped.



**Shristi Sahu**  
(M.E.4th Sem.)





## ARTIFICIAL INTELLIGENCE A KEY TO ALTER FUTURE...

In this developing era , AI is playing a drastic role in Modernising future. According to the calculated prediction and reports ,AI is the top most emerging technology in the future .Therefore, by keeping all this in mind, the various reputed institutions has started a separate courses and degree regarding AI.

Actually AI revolves around machine Intelligence, so that machine will show all the reactions and intelligence that a human shows, and perform work 4 to 5 times faster and with 100% accuracy. Although, machine never want a resting hour it only wants fuel.

### HOW CAN A FRESHER BOOST THEIR CAREER WITH AI?

**ANS:** A fresher can start with the free as well as paid courses available online with the reputed faculty.

Such courses are :GOOGLE AI, GOOGLE MACHINE LEARNING, STANFORD UNIVERSITY -MACHINE LEARNING, NVIDIA-FUNDAMENTALS OF DEEP LEARNING etc.

Many institutions such as University of Hyderabad, IIT Bombay, IIT madras , IISc Bangalore, ISI Kolkata etc are also providing offline courses with degree.

### APPLICATIONS OF AI

\* Agricultural Robots help in predicting the Ripping and Picking time for crops. Also they are used in soil monitoring.

\* Airplane simulator are using AI in order to process the data taken from simulated flights.

\* AI tutor increased drastically because it allow students to get extra one on one help in areas of needed growth.

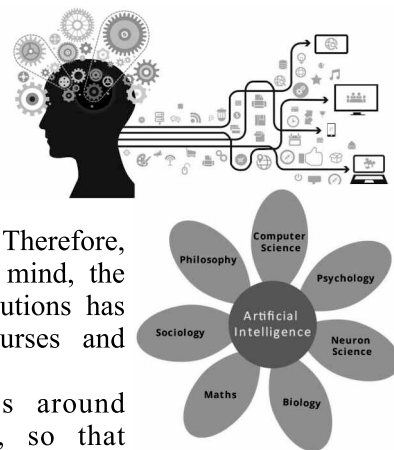
\* AI has also its important use in public policy such as emergency, services, health and welfare. It also help to assist the public to interact with government. AND MANY MORE.....

### INTERESTING FACT

Scientist build an artificial intelligence computer that was able to look legal evidence as well as considering ethical question to decide how a case should be decided and predict solution with 79% accuracy.



ADARSH YADAV  
EC-2nd sem



## POLYMER MODIFIED STEEL FIBRE REINFORCED CONCRETE

The steel fibre reinforced concrete are the building material. Which are more significance very fast because of the enhancing demand for high building properties in the building materials. These compound have more tensile strenght to compare more toughness and more absorption of energy.

The major properties of the steel forced concrete are as follows :-

1. Compressive strength.
2. Tensile strength.
3. Flexural strength.

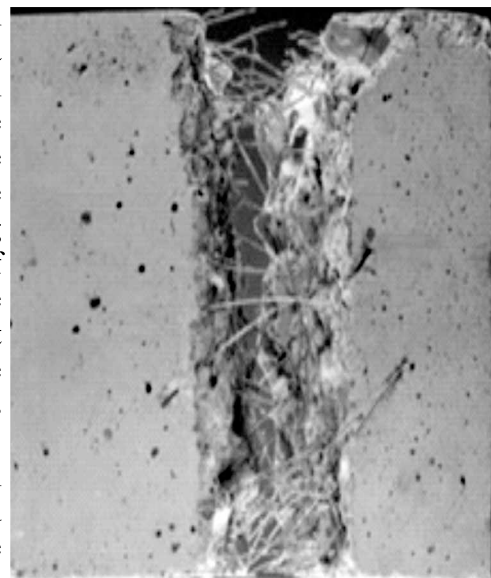
All the above properties can be increase by adding a suitable polymer into it and the polymer cement concrete has more strength of tensile fine behaviour of ductile. The network has the void filling effect and due to that , there is a decrement in the porosity along with it the pure radius is purified

.To enhance the ductile behaviour and flexural power of steel fiber reinforced concrete the syrene butadiene rubber emulsion is to increase the closener of the cementation

matrix the silica fume and fly ash are availed. Like any other type concrete the m i x i n g proportions of the steel fibre reinforcement depends on the necessary things for a

Like strength workability and much more. The gives Result is mechanical properties and lost feasibility

And porosity or pore size distribution. The cementitious material used in the test was ordinary Portland cement. Fly ash and silica fume.



Jaya Gond  
CE-3rd sem

### C Coding



### Ethical Hacking



### Workshop on Android



### Training - ME (CNC Training, Indore)



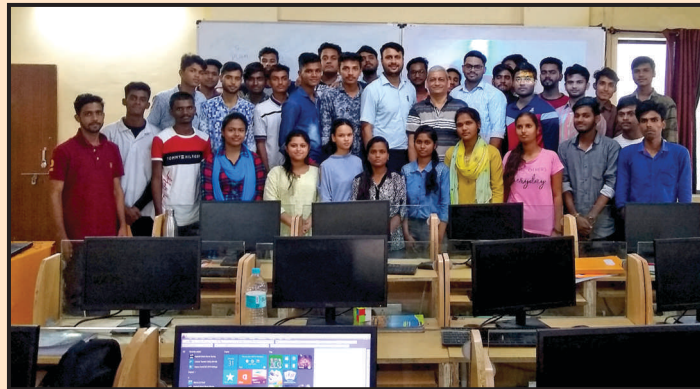








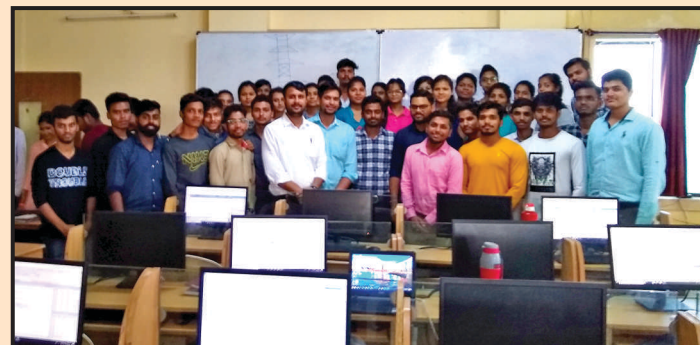
## Auto CAD training for 3rd Sem Students - CE Branch



## Field Visit - CE Branch



## STADD PRO Training for 5th Sem Students - CE Branch



## AVR Based Embedded System Training on e-YANTRA FIREBOT V-ROBOT - EC Branch



## MANUAL VS AUTOMATIC CARS: WHICH IS BETTER?

Manual transmission cars are pretty much the norm in Britain. But are there any perks to driving an automatic? And which one is better?

If you've seen any American film about driving, you'll quickly notice that manual cars are a bit of a novelty. So much of a novelty, the *Fast and Furious* franchise make a point of zooming in whenever a character changes gear. Once you see it, you can't un-see it. Drivers across the pond prefer driving automatic cars, and us Brits love a gear stick. But is there any merit to driving an automatic?

What's the difference between manual and automatic transmission?

Without getting too technical, the main difference is that automatic cars don't have a clutch pedal. You also have a simplified gearbox. Manual transmission cars have five or six gears, plus reverse, giving you full control over how the car performs. Automatic cars tend to have four modes:

- Park - P
- Reverse - R
- Neutral - N
- Drive - D

The car itself selects the right gear for the speed and road conditions. This means you only need to think about whether you're going forwards, backwards, or stopping. There are a number of alternative types of automatic transmission, including Continuously Variable Transaxle (CVT) gearboxes, single automated clutches and twin clutches. For the purposes of this comparison, we're looking at the traditional automatic gearbox.

**Are manual cars better than automatic cars?**

Things are never that simple. As you'd expect, there are pros and cons to either choice, and it largely depends on your circumstances and your driving style. Pros of manual transmission: The main plus point to driving a manual car is that you have more control over the car itself. Want to shift from second straight to fourth? Go for it! Need a bit of extra oomph for that hill start? Fill your boots. You'll likely find that manual cars are less expensive than automatics, on average. This could largely be down to the fact that automatics are less popular and so there isn't as much demand for them. Plus for some drivers, it just feels 'right' to change gears yourself. Some habits are hard to break, and there's a certain level of satisfaction to be had when shifting



gears. Sometimes, it's just as cool as the *Fast and Furious* films make it out to be.

Pros of automatic transmission: Hop into an automatic car and the first thing you'll notice is that it's a lot easier to drive. Without the need to press the clutch or find the right gear, stalling becomes a thing of the past. Driving in slow-moving or stop-start traffic is made easier with an automatic. There's also a much smoother transition between gears, resulting in a more pleasant, judder-free ride. Because there's less chance of accidentally grinding the gears, the transmission itself is less likely to fail. When it does, however, it's likely to be a more expensive repair job.

**So which is better?**

In general, an automatic car might be better suited to those who are used to urban driving. If nothing else, not having to press the clutch on and off continuously will lessen driver fatigue. If you travel longer distances or are used to driving on faster roads, a manual car could be a better option. Having better control over the gear selection means you can drive more efficiently.

Are manual cars more fuel efficient than automatic cars?

It's a common belief that automatic cars aren't as good on fuel economy as manual cars. This is largely because automatic cars shift gears depending on what it thinks is appropriate for the road and speed. On the flip-side, having more nuanced control of a manual car means you can better adapt to the road. While this might have been true in the past, automatic transmission technology has come a long way. The gap is quickly closing between the two. In some cases, you may even find that an automatic has better fuel economy than a manual.



Devesh Tiwari  
(M.E.6th Sem.)





## DID U KNOW ENGINEERS ARE GREAT THE ENTREPRENEURS

Having an engineering degree will provide many different job opportunities. One of those career possibilities includes becoming an entrepreneur. Starting a new business can be quite challenging. However, an engineer possesses a few characteristics that will make the transition a bit easier. Here are a few reasons why engineers are great entrepreneurs:



### 1. Engineers Can Solve Problems

The engineering field is filled with people who are trained to solve problems. New businesses erupt when there is a need to bring something into the market that is missing. Filling a void is perfect for someone capable of defining a problem. Engineers are trained to think logically and to follow a methodology to uncover useful solutions. This is how engineering brings value to consumers. This is the basis of a successful business.

### 2. Engineers Are Optimistic

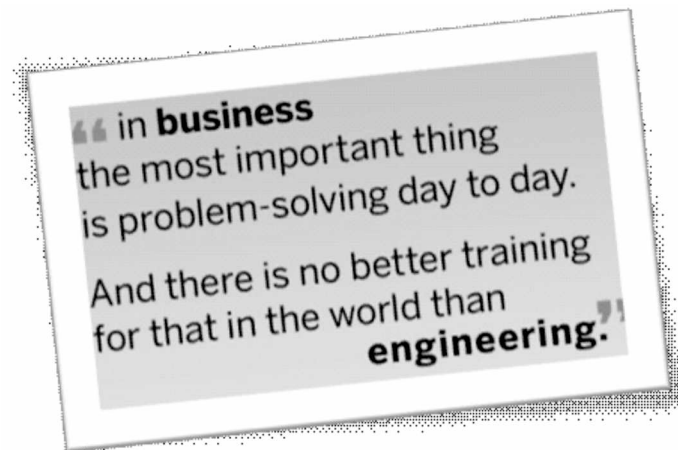
The world can be a very pessimistic place, especially since the economy is not always in a thriving position. People tend to be sceptical when it comes to starting something new and undiscovered. Engineering courses teach people to persist in the face of difficulty. An engineer always thinks positively and will persevere until a problem is solved. Even though it may take time, an engineer will find an answer. This is a key part of beginning a business. An entrepreneur must never give up and must continue to move forward in the face of adversity. A person's mindset and approach can mean the difference between success and failure.

### 3. Engineers Can Build Trust

The business world is filled with ruthless people. Many times, a business owner will lie to the public to get ahead. Instead of dealing with mistruths and being led down the wrong path, an engineer will bluntly tell the truth. This candour establishes trust with consumers. In this fashion, people with a background in engineering will have a positive influence on the business environment. Trust is a quality that is not easy to establish, but an engineer should have a little problem.

### 4. Engineers Have Humility & A Yearning For Knowledge

The typical salesman must be strong with convictions. This makes this person low on humility. Having doubts or being unsure about something is viewed as a weakness. On the other hand, an engineer tends to have great humility. An engineer understands that no one holds all of the answers. In the same way, an engineer is always willing to search for a solution to a problem, even one in the business world. When a person is not afraid to learn and gain more knowledge, growth will occur. Growing is a key factor involved in developing a solid business. Being an entrepreneur means constantly striving to uncover the most amount of knowledge possible. After a new product or service is developed, an engineer must identify the best target market. Not every

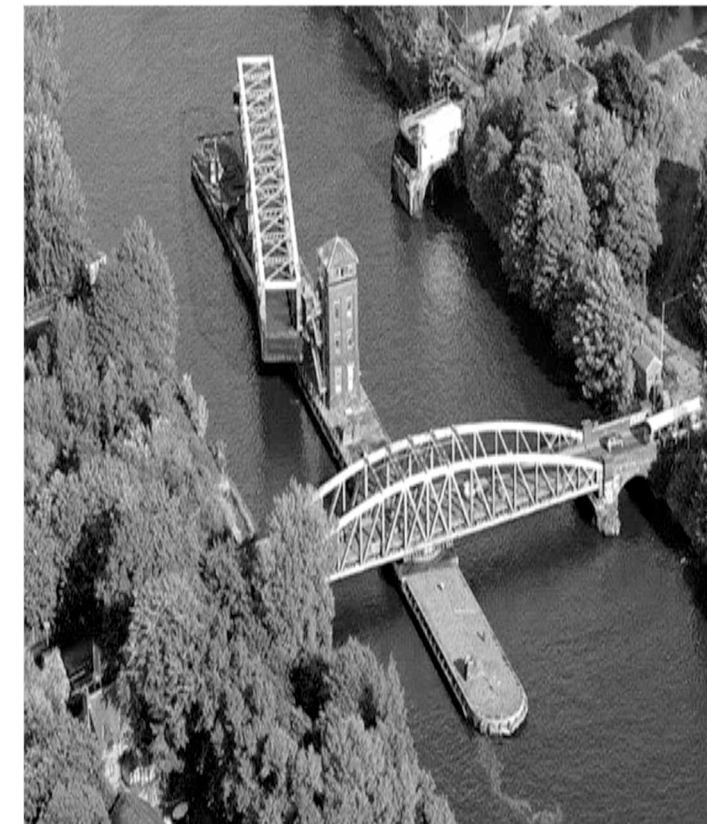


item will be a runaway success. When something is not working, it is important not to be afraid to stop and make changes. Since an engineer may lack experience in marketing, there may need to be a process of trial and error. However, the great attitude of an engineer will not be curbed by the need to alter a business plan and move on. Not every entrepreneur has a background in engineering, but it certainly can be a positive influence. An engineer will possess the necessary characteristics that make a new business successful. An engineer knows how to solve problems, will stay positive, can build customer trust, and will never stop learning new things. The business world is tough, but with these traits, a person is sure to succeed.



**Gaurav Rohitas**  
(C.E. 4th Sem.)

## THE BARTON SWING AQUEDUCT RELOCATION OF STRUCTURES



The word aqueduct is derived from two words Latin aqua ("water") and ducere ("to lead"). An aqueduct is a water supply or navigable channel constructed to convey water. In a more restricted use, aqueduct applies to any bridge that transports water across a gap. Large navigable aqueducts are used as transport links for boats or ships.

The Barton Swing Aqueduct is the world's most unique movable navigable aqueduct, spanning 101m and 5.5m wide. This is the first and only swinging aqueduct in the world, built in 1894, is considered as the major feat of Victorian civil engineering.

This elegant structure is built over the Manchester Ship canal, Irwell, England, carrying the Bridgewater canal across it. It is exhilarating to see such flawless engineering in the 1890s. The Barton Swing Aqueduct still remains one of Great Britain's iconic structures!



**Sarthak Shukla**  
(C.E.6th Sem.)



Relocation of structures is the process of moving a structure from one location to another. There are two ways for a structure to be moved - disassembling and then reassembling it at the required destination, or transporting it whole. A structure may be moved due to redevelopment, for environmental benefits, for commercial reasons or to preserve it for historic interests (if it is in danger at its present location). Relocating can reduce land acquisition cost, utilize existing space better, alleviate conflict for controversial demolition, or allow land to be subdivided. It is also more cost-effective than constructing a replacement home on that site, because relocating an average home is usually achieved in less than a month, which is far less than the time taken to construct a new home.

Public services such as electricity, water supply and telephone connections are disconnected before work commences. The dirt from underneath the building is excavated, and temporary support jacks are installed. Steel beams are inserted into the precise position where they will bear the entire weight of the building during the move. Using specialized hydraulic jacking equipment, the building is slowly lifted off its original foundations. Purpose-built rubber tyred 'dollies' are attached to the steel supporting structure. They incorporate a specialized hydraulic system which ensures the building stays unstressed during the move. When attached, the building can be towed to its new home.



**Srashti Soni**  
(C.E.6th Sem.)





## TRANSPORTATION ENGINEERING?

Civil engineering is one of the major branches of engineering and, as its name implies, is related to engineering for civilian applications. Civil engineering improves quality of C

- Buildings, bridges, and other structures.
- Highways.Constructions.
- Dams and levees.
- Water treatment and waste disposal plants.

Transportation engineering is a branch of civil engineering that is involved in the planning, design, operation, and maintenance of safe and efficient transportation systems. These systems include roadways, railways, waterways, and intermodal operations. Typically, the demand is the amount of traffic (people, cars, railcars, barges) that is expected to use a particular transportation facility, while the supply is the quantity and type of infrastructure components (roadways, bridges, pavements, etc.). These systems are typically large and expensive.

There are a number of attributes of transportation engineering that affect the types of statistical theory that are used in the profession.

One important aspect of transportation engineering is that the transportation engineer is not only interested in the infrastructure (e.g., bridges, rails, etc.) and the individual units (cars, trucks, railcars) that use the infrastructure, but also the user. Often it is necessary to understand the interaction of all three of these entitiesinfrastructure, individual units, and userto understand the system as a whole. Typically the infrastructure and units are considered the supply side of the equation, while the users are identified with demand.

Experimental studies, or designed experiments, are the mainstay of many standard statistics books. They are used extensively in many engineering disciplines, including pavement engineering, that are not necessarily applicable to transportation systems engineering. For example, consider an engineer who is interested in the various factors that affect skid resistance and the relationship to crash rate. From an ethical standpoint, she cannot place various types of pavement surfacing on different sections of highway, observe what types of accidents occur, and then choose the best type of pavement based on the empirical accident results. Instead, most transportation studies are observational in nature, and as a result, the statistics



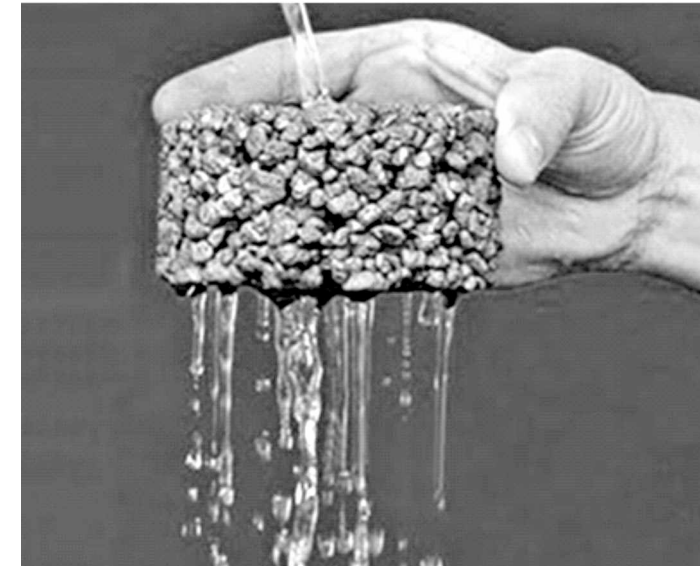
used by transportation engineers reflect this characteristic. In addition, it is sometimes very difficult to obtain certain data from the transportation system, so statistical techniques that can handle missing data or use a priori knowledge are needed. Lastly, much of the data are correlated and interdependent. For example, the travel time on a given link is often correlated to the travel time on the immediate downstream link. Sometimes this correlation is negative: Consider, for example, a driver stopped at a traffic signal that is red. If the signal system is coordinated properly, the driver will have a lower probability of being stopped at the traffic signal on the next link. At other times, however, the correlation is positive: If one link is experiencing high travel times because of excessive demand, then other links also will experience high travel times because of the same demand. Regardless, as this example demonstrates, the assumption that different transportation phenomena are independent is not always valid.

In the United States transportation is estimated as representing 10% of the nation's gross domestic product (USDOT, 2009), and a well- maintained and comprehensive system is considered by many to be a necessary condition for a successful economy. However, the American Society of Civil Engineers (ASCE) in their annual report card gave a grade of D to the U.S. roadway system. As the report notes, "One-third of America's major roads are in poor or mediocre condition and 45 percent of major urban highways are congested.



**Kartik Choudhary**  
Civil 4th Sem

## WHEN IT RAINS, IT DRAINS! SHORT STORY OF A LONG PIPELINE



Pervious concrete is a special type of concrete having high porosity that allows water from precipitation and other sources to pass directly through, thereby reducing runoff from a site and recharging groundwater level. It is also called porous concrete or permeable concrete. Pervious concrete was first used in the 1800s in Europe for pavement surfacing and load bearing walls. This concrete contains less fine aggregate and has just enough cement paste to cover coarse aggregate for preserving the interconnectivity of the voids.

A pervious concrete mix design was developed by CP Tech Centre at Iowa State University which was tested on 4-inch overlying concrete pavement which achieved brilliant results. It proved that pervious concrete can be designed for pavement overlays and pedestrian walkways as it has sufficient strength, capability of reducing noise at a certain extent and also the ability to maintain voids when compaction is done. Over a period of time, sand, dust and other debris get collected in voids of the concrete which results in reduction of its permeability. In order to preserve maximum functionality, pervious concrete should be cleaned from time to time which can be achieved by wetting the surface and vacuum surfacing.



**Monika Bavaria**  
(C.E.4th Sem.)



Cairn India, an oil exploration company, has created history by constructing the world's longest pipeline with a length of 700 km in the Thar Desert, Rajasthan. The astounding feature of this pipeline (which carries crude oil) is a technology which keeps the 700-km long pipe heated at 65C throughout the year!

Cairn India made a huge discovery of crude oil one and a half km beneath the Earth's surface. The oil discovered was waxy, and a temperature of 65oC was required to melt it sufficiently, thus ensuring that the oil could get transported to various refineries. The first phase of the pipeline traverses more than 270 villages and has more than 700 crossings, including 34 major rivers and 38 canals. The entire project required the engagement of more than 6,000 people.

The technology used by the engineers in this one-of-a-kind project is truly exceptional. Maintaining a constant temperature for 700km in no small task, and that this has been achieved in our country is a matter of pride for us!



**Dhairya Singh**  
(C.E.4thSem.)



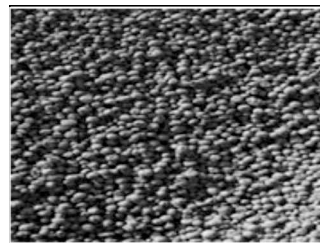


## SMARTER MATERIALS FOR SMART CITIES



Builders and developers today are giving more focus to the quality of construction materials used in construction and are focusing on disaster-resistant architecture that can withstand such natural calamities. For INDIA to realize the Prime Minister's visionary idea of Smart Cities, it would require not only safe architecture, but also smarter materials and solutions which make the construction process easier and faster.

Some of the smart, eco-friendly and innovative construction solutions to harness the need for a lighter, faster and easier method of construction are given below



### SPEEDFLOOR : CAST FLOORS WITHOUT DECKING SHEET OR PROPS

A light weight technology has introduced from New-Zealand, it is quick and easy to install that reduces the

slab construction cycle from 3 weeks to less than a week. Speedfloors reduces both the cost and time of slab construction.

### CUT AND BEND : READY TO USE TMT BARS

Ready to use TMT bars which are cut and bend accordingly to the bar bending schedule, this process gives accurate sizes and curves, produces minimal scrap and uses lesser labour per tone which ultimately translates into cost saving for the consumer.



### REINFORCED EPS : THERMALLY EFFICIENT CONSTRUCTION

A renowned building technology from Schnell,

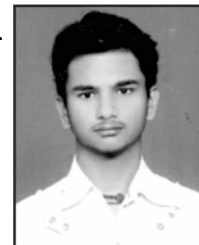
Reinforced EPS is a smart construction technique to stay cool in summer and warm in winters without the need of additional insulation, Light and easy to install, the technology is 50% faster than traditional mode and helps in saving upto 30% electricity consumption through its supreme thermal efficiency.

### LIGHT WEIGHT AGGREGATE (LWA) : AGGREGATE THAT IS CLEAN, GREEN AND LEAN

Another fortifying product being rolled out is LWA, an eco-friendly aggregate that is upto 50% lighter than conventional aggregate. Lighter aggregate triggers lighter concrete, which in-turn brings down the weight of the building. Made entirely from fly-ash, its high strength combined with low density makes it ideal for use in structural concrete used in bridges and highways.

### FLY-ASH BRICK : HIGH ON STRENGTH, HIGH ON FINISH

*Now-a-days companies are manufacturing high-strength bricks made of fly-ash, a by-product of power plants. With high strength and excellent finish, these bricks can be used in load bearing walls. Their supreme finish helps save construction time and cost in binding mortar and plaster.*



Vinay Shrivastava  
(C.E. 4th Sem.)

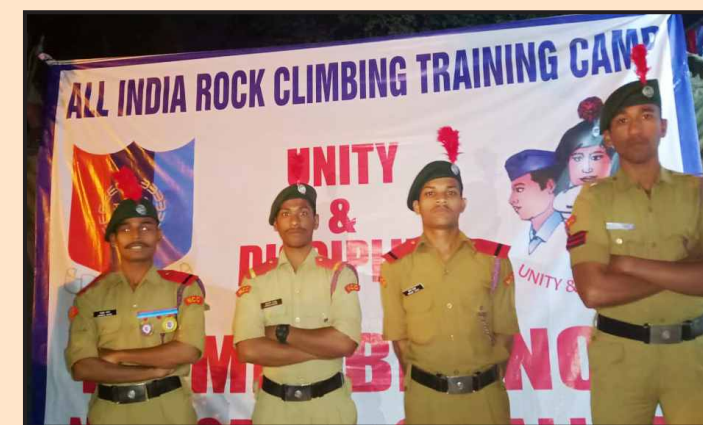
### DETAILS OF ACHIEVEMENT ARE-

Runner up of STATE LEVEL KABADDI TOURNAMENT which was held on 1st November 2019....



जबलपुर नोडल ने जीता खिताब  
राज्य स्तरीय अभियांत्रिकी पुरुष कबड्डी प्रतियोगिता

## The Youth of a Nation are the Trustees of Posterity



The enrolled strength of the institution is 100 cadets out of which 33 seats have been filled by girl cadets. The selection for 2019 admitted students took place in August and the new admitted students excelled themselves in all the spheres of NCC selection activities. As a part of NCC training our 64 cadets (2nd year and 3rd year cadets) took part in the CATC Camp (Combined Annual Training Camp) held at Jabalpur. Which our cadets make their presence felt and won prizes in the various competitions held during the session.

This year so far has been very much beneficial for the cadets as they had chance to attend various national camps.

2 cadets Under officer Yash Purohit and Under Officer Vanshika Singh were the part of All India Thal Sainik Camp. Both of them were given Best Cadet Award at unit level on 71st NCC day celebrated on 24th November 2019 at NCC GP HQ Jabalpur. 4 cadets (Anshul Patel, Hemant Yadav, Suraj Kumar, all Mechanical 5th Sem, including Dewashish Bopche civil 5th sem) attended RCTC (All India Rock Climbing and Trekking Camp) held at Gwalior from 31st October to 11 Nov 2019. Cadet Mansi Yadav was the part of team selected to represent NCC Jabalpur GP HQ during Dhraa-Neer program held at Shorya Smarak, Bhopal during 71st NCC day. 5 cadets (Ashutosh Mishra, Ayush Yadav, Shivani Burman, Kajal Shrivastava, and Yash Chadar) have participated in EBSB (Ek Bharat Shrestha Bharat) camp held at Indore from 22 Nov to 2nd Dec 2019. Cadets Shaina Paul and Apoorva Dwivedi have been the part of RDC selection camp where cadet Shaina Paul is working hard to be the part of Republic Day Camp 2020. 5 cadets are going to attend Gaya (Bihar) Trekking Camp starting from 22 January to 22 January 2020. 12 cadets are going to be the part of 15 days Army Attachment Camp at Babina, Jhansi (UP) From 27 January to 11 February 2020.



# COLLEGE TOPPERS

## Session January - July 2019

**CE**



**8.75**  
**SGPA**  
8th Sem.

Sourabh Namdeo



**8.38**  
**SGPA**  
6th Sem.

Yamini Tiwari



**8.75**  
**SGPA**  
4th Sem.

Shwetambari Soni



**8.62**  
**SGPA**  
2nd Sem.

Tanya Nema

**CSE**



**9.63**  
**SGPA**  
8th Sem.

Rachit Agrawal



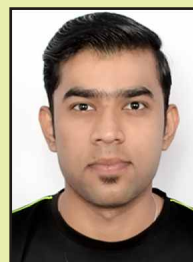
**8.88**  
**SGPA**  
6th Sem.

Arya Khampariya



**8.83**  
**SGPA**  
4th Sem.

Hardik Gupta



**8.76**  
**SGPA**  
2nd Sem.

Aditya Dixit

**EC**



**9.19**  
**SGPA**  
8th Sem.

Madhusudan Patel



**9.25**  
**SGPA**  
6th Sem.

Saniya Vishwakarma



**9.42**  
**SGPA**  
4th Sem.

Rimsha Khan



**8.95**  
**SGPA**  
2nd Sem.

Shivani Budhodi

**IT**



**9.25**  
**SGPA**  
8th Sem.

Shrashti Tiwari



**8.5**  
**SGPA**  
6th Sem.

Roshan Mathurkar



**9**  
**SGPA**  
4th Sem.

Mansi Kesharwani



**8.48**  
**SGPA**  
2nd Sem.

Prachi Raikwar

**ME**



**8.75**  
**SGPA**  
8th Sem.

Sushant Kumar



**9.06**  
**SGPA**  
6th Sem.

Ritu Sharma



**8.38**  
**SGPA**  
4th Sem.

Abhijeet S. Chauhan



**8.71**  
**SGPA**  
2nd Sem.

Shristi Sahu

**GLOBAL ENGINEERING COLLEGE, JABALPUR**