



Vidya Vikas Education trust's
Universal college of engineering

Gujarati Linguistic Minority Institution
Near Bhajansons & Punyadham, Kaman-Bhiwandi road, Vasai, Palghar- 40120 Page 1

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#ASHTAG

Applied Science and Humanities Department

VISION

The Department of Applied Science and Humanities is committed to dynamically integrate the components of Science, Humanities and Engineering to groom students to transform them as globally acknowledged professionals.

Look for something positive in each day, even if some days you have to look a little harder.

MISSION

The department is carrying a mission to create and disseminate the knowledge and techniques in intellectual areas of Engineering and other core areas of Applied Science and Humanities for betterment of Eco system.

To inculcate the importance of Applied Science and develop a natural flair for Engineering and Technology which in turn shall mold students into a competent professional.

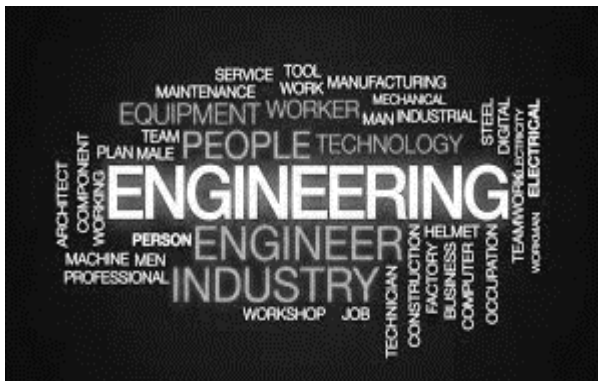
To be recognized for practicing the best teaching-learning processes to create highly competent, resourceful, and self-motivated young Engineers for the benefit of the society.

Why Engineering is so Important to Society

Engineering is a profession in which scientific knowledge and mathematics is used and experimented with to develop ways that benefit mankind, making it extremely important to society for several reasons.

The environment that engineers work in ranges from offices to studios and laboratories to the outdoors and even underground. Engineering is very closely linked to technology, and the rise of it, which is why it has played a huge part in technological advances including computers, hospital machines, the internet and more.

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linked to technology, and the rise of it, which is why it has played a huge part in technological advances including computers, hospital machines, the internet and more.

Healthcare has also improved dramatically thanks to advancements in medical technology thanks to engineers. The improvement of medical technology has meant that the discovery of illnesses and treatment has helped to save and improve the lives of many people.

Credible engineers that have changed society include Alan Turing, who invented the Enigma machine that helped to bring an end to World War II, the engineers behind high speed flight that helped to send man to space and the engineers behind advancements in communication- who'd of thought we could see and talk to someone on a screen from anywhere in the world.

New developments are taking place every single day. Have you heard of the Crossrail in London? It will increase the transport capacity in London and the South East by 10%, contributing to shorter journey times and easier, quicker connections.

No one knows exactly how engineers could make a difference to society in the future, but it is guaranteed that they will. New engineering jobs are constantly appearing alongside new and innovative technologies. Though it's easy to overlook the sheer amount of work that engineers do, it is inevitable to understand that there is more to engineering than is first thought.

If being at the forefront of technology in the future and helping to make a difference to lives is something that interests you, an engineering career could be the perfect choice.

Source: <https://get-trained.org/latest-news/why-engineering-so-important-society#:~:text=Engineering%20is%20a%20profession%20in,to%20society%20for%20several%20reasons.>

Contributed by: Shivam Shukla

Why Communications Skills Are Critical to Engineers

Being able to clearly share ideas with others is an important quality in a leader

Engineers are creative types. They are responsible for dreaming up and building systems that companies will implement or sell, with the goal of improving the bottom line. Because their roles require team building and leadership, engineers must be able to clearly communicate complex ideas and technical project plans. They also need to be strong persuaders to see their designs come to life. Building consensus is a giant step toward delivering a project on time and according to specifications.

Here are a few important communication skills that every engineer should possess, and tips on how to master them.

Many people are intimidated by public speaking. But in the working world, it is a vital skill to be able to talk in front of groups of people, as well as to larger crowds. Being able to



communicate ideas freely and confidently affects everyday interactions and can impact career paths. Incorporating relatable, self-deprecating and humorous content engages the audience. Several professional groups offer coaching to help members feel more at ease with public speaking. For example, the nationwide Toastmasters organization offers tips and mentoring to improve speakers' confidence and abilities. For engineers in particular, this talent is key to sharing ideas at staff meetings, trade shows and conferences.

DOCUMENTATION/WRITING

Engineers need to be able to report their findings in a clear, concise manner. They will be expected to explain how their ideas evolved, why they designed a project as they did, why a project meets current needs and what makes an idea worth investment. Engineers must be able to communicate the level of effort required, the materials necessary and a time estimate of how long the solution will take — from building a prototype to designing for manufacturability to mass production. Further, some engineers' jobs depend on their being published in prestigious industry journals. Community colleges typically offer business writing classes that can help hone a student's writing technique.

SPEAKING WITH AUTHORITY

The enemy of any speaker is the audience's attention span. Engaging presenters have a knack for playing to their audience by being plain-spoken and knowledgeable without being dull or preachy. Understanding the power of the pause — not rushing in to fill every quiet moment with a word — is a particularly useful tactic. In addition, telling a relevant story helps draw in the audience and is effective for explaining a particularly complex subject. Engineers who can articulate their vision for a product and get support from other engineers, as well as management, will reap career benefits. Having thorough knowledge of the subject matter is the most crucial element for being viewed as an expert whose opinion is worthy of attention.

Effective communicators are more likely to be promoted than those who struggle to get their message across. Engineers who are good communicators are recognized by their supervisors and by their clients, which often leads to loyal customers and solid performance reviews.

Source: <https://spectrum.ieee.org/the-institute/ieee-member-news/why-communications-skills-are-critical-to-engineers>

Contributed by: Marina Thomas

Importance of Chemistry in Engineering

Chemistry is a branch of natural sciences that study the matter, energy, properties, and their relationship. Engineering is there to apply this science practically. Most of the students think that there is no use of chemistry in engineering. But actually there a lot of applications of chemistry in engineering. Chemistry is present in everything in the world. It's important in everyday life too.

Chemistry is directly and indirectly used in engineering. We can never ignore chemistry while studying engineering. Chemistry is used in many engineering fields like manufacturing, smoothing production facilities, and making more valued chemicals for long-lasting products.

Chemistry is vastly applied in electrical engineering. Because there is all discussion about the transistor, resistor, capacitor, inductor and also semi-conductors. The current passing through these items is due to the movement of



electron. Electron and its properties are also chemistry sub field. Electrical engineers must have this knowledge to make an electrical circuit. When electrical engineers study the formation of batteries, he must have knowledge about the reactions of elements present in the chemicals of batteries. Semiconductors like silicon, germanium, and indium are also used in many reactions. So, to perform reactions safely electrical engineers must have the knowledge of their chemical properties.

In civil engineering, cement is the basic element of any kind of construction. So, one using cement, should know about the formation of cement. Cement is formed through a chemical process. In civil engineering, subjects like mechanics of material, construction material, concrete and masonry structures are also related to chemistry. Knowledge of environment, the material used in construction and their relation and interaction with each other.

It is hard to believe that chemistry has a hand in almost every type of engineering but it is true. Chemistry is not a subject of mechanical engineering but it guides in many topics such as thermodynamics and thermochemistry.

It also covers the topics of mechanical engineering i.e. mechanics, kinematics, fabrication of electronic devices, heat transfer in the combustion engine and IC engines. Mostly, Inorganic chemistry is used in mechanical engineering because it contains the knowledge of metals, non-metals, and their properties.

When mechanical engineer uses objects made of metal to design, built, analyze and manufacture bearings, gears, and cogwheels, semi-conductor tools motor engine, generator engine, he should know all properties of metals.

Chemistry has a key role in nuclear engineering. Nuclear engineering is the study of nuclear reactions to produce energy from different methods. Different periodic radioactive elements are used in these reactions. Atom is the most important term in this engineering. Nuclear engineers play with Atom in many ways to perform reactions. Nuclear engineers study properties of many radioactive elements radium, radon, platinum, uranium, and many others

In fewer words, chemistry is widely involved in our daily life and in engineering due to which we cannot ignore it in any aspect of our life. Most of the engineering depends upon chemistry but we are not so aware of it. In Biomedical Engineering too, Chemistry has many applications in the field of medicine.

There should be a subject of chemistry in one of the middle semesters of engineering to promote the knowledge of chemistry in students. So, that they can apply chemistry theories in their practical life.

By Sana Riaz

Source:<https://www.biomadam.com/importance-of-chemistry-in-engineering#Use-of-Chemistry-in-Daily-Life>

Contributed by: Komal Jain

Editor's Message

Dear reader this issue of #ASHTAG focuses on some pertinent questions that troubles the minds of young engineers in-making especially when they step into the Engineering field. The faculty members of the Applied Science and Humanities Department have helped in answering few of these question by sharing these wonderful articles. I wish to convey my appreciation to them.

I also urge the student community to use this medium to convey to creative thoughts, share your thoughts or articles that you feel are interesting and important. Hope you enjoy the articles presented.

HAPPY READING!!

Edited and compiled by Marina Thomas.

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