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Gujarati Linguistic Minority Institution

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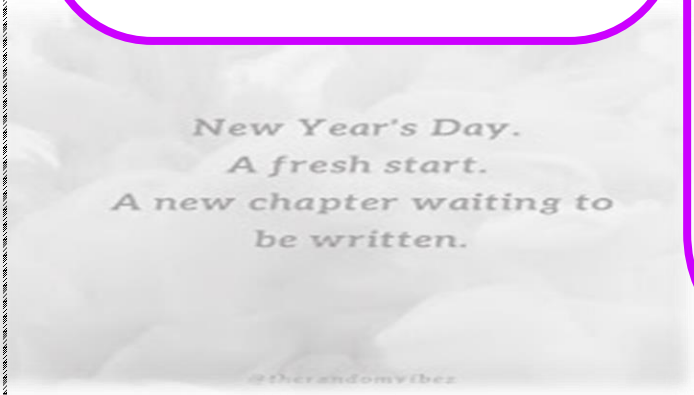
Applied Science and Humanities Department

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.



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.

Trends in Architecture and Engineering for 2021

The trends that project owners will see in 2021 architecture and engineering (A/E) projects reflect many of the changes around us. Success will depend on how well we respond to changes in our environment, climate and regulations, as well as changes in how and where we work.

Growing focus on sustainability and climate resilience

Cities and states with plans to improve infrastructure must account for changing weather patterns that result in a drier, wetter or hotter climate, depending on location. Project owners who greenlight initiatives that benefit the environment and boost climate resilience can achieve greater buy-in from the public and key stakeholders. Innovative infrastructure can absorb stresses and maintain function in the face of climate shifts while remaining resilient to external pressures and even benefitting the surrounding environment. For example, green alleyways capture and filter rainwater, sending only clean water into rivers and lakes.

Rising investment in bicycle and pedestrian infrastructure

Cleaner air, quieter streets, and more people biking and walking outdoors – this healthful silver lining during a challenging year is a trend that communities can capitalize on.

Some benefits of investing in non-motorized infrastructure include:

- **Cost savings**. Bicycle paths and complete sidewalks are comparatively less expensive than building new roadway infrastructure.

- **Increased public health and safety**. Walking and biking are a great way to achieve moderate physical activity that leads to health benefits like preventing hypertension, diabetes, obesity and asthma. Plus, the number of bicycle and pedestrian fatalities can be reduced when communities invest in infrastructure, policy and education.
- **Increased community wellness**. Communities benefit when they prioritize events and infrastructure that bring people together, encourage physical activity and help reduce the impact that motorized transportation has on the environment. People are drawn to places that promote health, and they often come back – sometimes to live.
- **Technology brings better ways to visualize projects.** Visualization technologies such as 3D modelling, 3D digital renderings and 3D animation can help key stakeholders not only see how a project will look before it becomes a reality, but also experience it as if they were physically there. Also, providing stakeholders and the public with a better understanding of your projects at crucial design stages increases buy-in and can save you money due to faster, more informed decision making.

Virtual public engagement is here to stay

Project owners have found virtual public engagement to be as effective if not more so than in-person engagement events. More tools are available than at any time in history. Putting them to use in a way that boosts transparency, trust and the safety of your stakeholders can benefit your projects for years to come.

Dwindling sources of revenue may affect how we approach and complete projects. Yet, better outcomes are possible if we are prepared to pivot quickly to attain the highest levels of innovation, efficiencies and agility.

By **Mark Broses**, **Benita Crow** and **Paul Wells**

Source: https://www.sehinc.com/news/8-trends-architecture-and-engineering-2021

Contributed by Mr. Shivam Shukla

The Importance of Humanities in Engineering Education

Prof. MS Ananth emphasized the university as subject to a 'wonderful randomness', by which he meant the prospect of continuous improvisation and unending growth. The purpose of a university here is to open and refine the mind. But this lies forgotten, Prof. Ananth lamented, in the culture of placements, where employment is often independent of the education that students have received (say, with engineering students seeking and entering jobs that have nothing to do with engineering). He also criticized the current system of regular evaluation which only tests fragmented pieces of knowledge, stressing that "we must not let evaluation become more important than teaching itself". More widely, holistic learning would mean learning both the sciences and the humanities and social sciences (referred to collectively as HSS from now on).

Valuing the Humanities and Social Sciences: Why?

Some important considerations brought up by Prof. Ananth that reflect why a basic understanding of the Humanities and Social Sciences is essential to each one of us include:

- **Preserving a democracy**: HSS develops respectful citizenship by cultivating the ability to evaluate historical evidence, use economic principles and appreciate the complexity of the world around us.
- **Human development:** By developing in us the capacity to visualize and internally revise scenarios of future interactions and possibilities for the human race at large.

- **Creativity**: It's very important to cultivate a synergy between the left and right brain, but contemporary educational institutes often neglect this. Creativity involves developing aesthetic judgments, social emotions, moral sense — things cultivated through an HSS education.
- **Developing leadership**: The world over, Prof. Ananth remarked, few engineers are in leadership positions, not because they are not capable but due to a lack of crucial skills such as critical thinking, self-knowledge and the ability to be a productive member of society: all things imparted through an HSS education.
- **Moving towards a better society**: There will always be two (or more) sides to every issue, but these can only be resolved by extensive discussions without anyone getting personal. Conflict resolution and the ability for constructive debate are crucial to resolve important issues and move forward together, and these are inculcated by studying the HSS.
- **Importance of intuition**: Speaking about how intuition plays a big role in many major scientific discoveries, Prof Ananth quoted: "the intuitive mind is a sacred gift and the rational mind a faithful servant, but we have created a society that honours the servant and has forgotten the gift".
- **Cultural literacy**: We should have a grasp of the worlds, metaphors, ideas and core values of the culture(s) we hold in common. The objective of such literacy is communication — and this should be an outcome, not objective, of HSS education.

***The importance of the HSS to STEM(Science, Technology, Engineering and Mathematics)*:**

Prof. Ananth stressed the importance of involving several teams trained in the social sciences into science and technology research, to ensure efficient and successful

implementation. It is impossible to make engineering work sustainably and over a long term basis in the real world without an understanding of the social context and without involving the people for whom it is designed.

It is difficult not to notice the underlying assumption that HSS has a secondary status to science and engineering and is a 'light' subject. This opinion is expressed not only by students but also faculty members.

What the Humanities and Social Sciences Means to Me *(the author)*

With its own multitude of research approaches, methodologies and methods — learning in the humanities and social sciences is a creative exercise with its own internal discipline just like in any other field. As Prof. Ananth remarked, there are many ways of reaching the truth, and as a social scientist would argue, there is no one truth, only several ways of looking at it. And HSS helps one find these perspectives by recording, analysing and making sense of the different paradigms and processes that shape our world. (And one of these paradigms happens to be that of science).

Prof. Ananth was very right in pointing out a fundamental asymmetry here: he said that while liberal arts aficionados consider those who don't know Hamlet uncultured, they take great pride in not knowing the difference between differential and integral equations (and this may well also work the other way around). But as he remarked, Hamlet and calculus are both difficult and gloriously beautiful, and his contention that every individual must have a basic understanding of all important developments in both HSS and science from the past century at least was very sensible and welcome.

Finally, he also stressed the importance of **ethics** (a topic explored in great depth in the humanities) concerning work in the sciences, especially when it comes to practical applications of science and technology.

By Isha Ballamudi

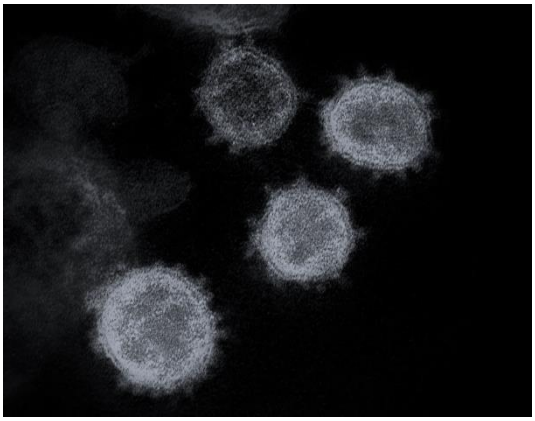
Source:https://www.t5eiitm.org/importance-humanities-engineering-education/

Contributed by Dr. Teena Trivedi

The new COVID-19 variants are still a mystery, but here's what we know so far

If there's one thing we can count on in life, it's change, and viruses are no exception. Variants of the original SARS-CoV-2 virus have popped up in different corners of the world and while that might sound a bit scary it's actually perfectly normal, or even "humdrum" as one *Nature* study puts it.

While virologists predicted all along that the virus that causes COVID-19 would mutate, what scientists still don't know exactly is what these variations might mean for how infectious or deadly the virus is. And while we know a handful of COVID-19 variants have circulated throughout the US pretty much unnoticed by the general public, the UK and South Africa variants share some more atypical characteristics that seem to make them more infectious.



Here's what you need to know about the new mutated versions and COVID-19.

The UK variant (B.1.1.7)

The UK variant of COVID-19—officially known as B.1.1.7—was first identified on December 14, 2020, causing tightened lockdown rules and border control inside the UK and between other countries. The virus has been found more frequently in southern England, and what has stood out to researchers most is the large number of mutations it's taken on—a whopping 23 shifts from the original COVID-19 virus (SARS-CoV-2) that emerged from Wuhan, China in late December 2019.

While scientists believe that the COVID-19 vaccines that are currently being distributed will still be effective against this version of the virus and there's no change in disease severity compared to the original, this version may be more contagious.

According to the BBC, this variant can spread between 50 and 70 percent faster than previous forms of the virus, meaning we might have to amp up lockdowns and other techniques to prevent it from spreading.

No one knows for sure what makes this variant more contagious. Some surmise that it might have certain traits that allow the virus to enter human cells more easily.

South Africa variant (501Y.V2)

A few days after the discovery of the UK variant, another variant—known as 501Y.V2—popped up in South Africa that displays some similar mutations. Research has found that this variant also is becoming more dominant than earlier variants.

Similar to the UK variant, the South African variant doesn't necessarily mean people get more sick, but it certainly appears to be more transmissible. Unlike the UK variant, some scientists are worried that 501Y.V2 may be more resistant to the current vaccines. Research is being done to test out the efficacy of the vaccine against this variant, and more information could be available soon.

By Sara Kiley Watson

Source: https://www.popsci.com/story/health/covid-19-strain-uk-south-africa/

Contributed by Mrs. Neha Shah

Edited and compiled by Marina Thomas

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