



Vidya Vikas Education Trust's
UNIVERSAL COLLEGE OF ENGINEERING

Near Bhajansons & Punyadham, Kaman Bhiwandi Road, Vasai, Palghar-401208.

DTE code:3460

Linguistic (Gujarati) Minority Institution

Approved by AICTE, DTE, University of Mumbai, Maharashtra, State Government

JULY 2020 EDITION

NAAC B+ Accredited

#ASHTAG

**APPLIED SCIENCE AND HUMANITIES
DEPARTMENT**

*Let the rain wash away,
all the pain of yesterday*

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.

Tips to succeed in MHT CET and exploring future in Engineering

As an IQAC Initiative, Department of Applied Science and Humanities had organized a Webinar on “Tips to Succeed in MHT CET and exploring Future in Engineering” for the

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Department of Applied Science and Humanities
presents **WEBINAR** for MHT-CET students

**TIPS TO SUCCEED IN MHT CET AND
EXPLORING FUTURE IN ENGINEERING**

FREE REGISTRATION

Monday, 22nd June 2020
Time - 12:00 pm to 1:00 pm

Join us on Google Meet / YouTube

Registration link: <https://forms.gle/FZiEGBZY5Jt4FmTW8>

e-Certificate will be provided

Bus Facility available

Engineering aspirants on 22nd June 2020. The objective was to provide the necessary tips and tricks to solve the CET paper and give a brief idea about various streams of Engineering and also exploring the Job Opportunities after Engineering. The session started at 11:45 am with college videos and departmental activities presentation and 70 participants reported for the Webinar. All participants were guided to join the YouTube Live session by clicking on the link provided to them in the WhatsApp group.

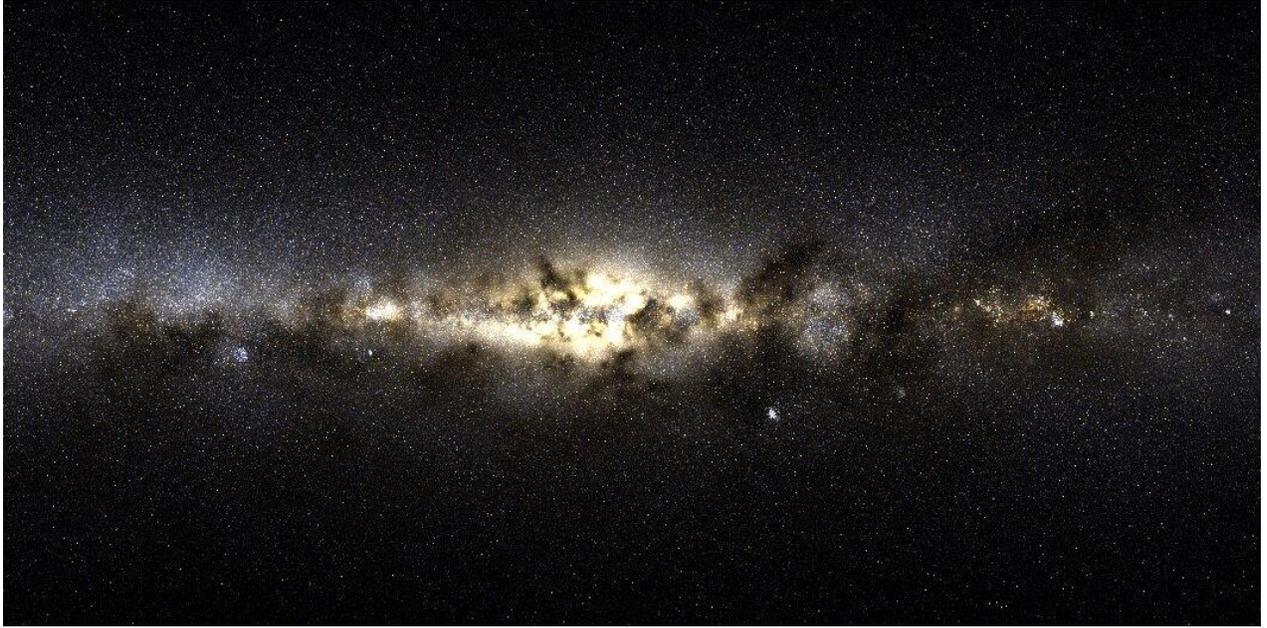
They were formally welcomed, and then were addressed by Physics, Chemistry and Mathematics faculty members about the Tips and Tricks to solve the CET Paper explaining about the topics with maximum weightage, time table preparation, practicing more problems, solving two problems as an example for every subject. Later they were addressed by the HOD of AS&H Department briefing about the FE Subjects, USP of the Department, Academics, Technical Events, Sports and Cultural Events. Participants were later addressed by the Faculties of Computer, IT, Civil, Artificial Intelligence and Machine Learning, Data Science where they got an idea about USP of Departments, Academics, Technical Events, future scope of various streams

The Participants were addressed by Training Placement Officer of the College explaining about the Job Opportunities after Engineering. At the end, participants' queries were picked up and resolved by the respective faculty members. It was an informative Webinar for the Engineering aspirants with a huge response and ended with vote of thanks.

The way I see it, if you want the rainbow, you gotta put up with the rain.

Dolly Parton

New Collection of Stars, Not Born In Our Galaxy, Discovered In Milky Way



With help from supercomputers, the Gaia space observatory, and new deep learning methods, Lina Novib, a postdoctoral scholar in theoretical physics at Caltech, discovered a cluster of stars in the Milky Way that were not born of the Milky Way.

Writing in *Nature Astronomy* this week, Necib and her collaborators describe Nyx, a vast new stellar stream in the vicinity of the Sun, that may provide the first indication that a dwarf galaxy had merged with the Milky Way disk. These stellar streams are thought to be globular clusters or dwarf galaxies that have been stretched out along its orbit by tidal forces before being completely disrupted.

The discovery of Nyx took a circuitous route, but one that reflects the multifaceted way astronomy and astrophysics are studied today.

FIRE in the Cosmos

Since 2014, researchers from Caltech, Northwestern University, UC San Diego and UC Berkeley, among other institutions, have been developing highly detailed simulations of realistic galaxies as part of a project called FIRE (Feedback in Realistic Environments). These simulations include everything scientists know about how galaxies form and evolve. Starting from the virtual equivalent of the beginning of time, the simulations

produce galaxies that look and act much like our own. Necib studies the kinematics—or motions—of stars and dark matter in the Milky Way.

Mapping the Milky Way

Concurrent to the FIRE project, the Gaia space observatory was launched in 2013 by the European Space Agency. Its goal is to create an extraordinarily precise three-dimensional map of about one billion stars throughout the Milky Way galaxy and beyond.

"It's the largest kinematic study to date. The observatory provides the motions of one billion stars," she explained. "A subset of it, seven million stars, have 3-D velocities, which means that we can know exactly where a star is and its motion. We've gone from very small datasets to doing massive analyses that we couldn't do before to understand the structure of the Milky Way."

Future Steps

Necib and her team plan to explore Nyx further using ground-based telescopes. This will provide information about the chemical makeup of the stream, and other details that will help them date Nyx's arrival into the Milky Way, and possibly provide clues on where it came from.

The next data release of Gaia in 2021 will contain additional information about 100 million stars in the catalog, making more discoveries of accreted clusters likely. The successes of the Caltech team's approach may have an even bigger impact.

by Aaron Dubrow, [University of Texas at Austin](#)

Nature Astronomy (2020). [DOI: 10.1038/s41550-020-1131-2](https://doi.org/10.1038/s41550-020-1131-2)

Contributed by Mrs. Neha Shah

*Clouds come floating into my life, no longer to carry rain or usher storm,
but to add color to my sunset sky.*

Rabindranath Tagore

*The drops of rain make a hole in the stone, not by violence, but by oft
falling.*

Lucretius

How Engineering Is Helping to Battle COVID-19



From its origins in Wuhan, China to the UK, the novel coronavirus is causing disruption and applying pressure to healthcare systems across the world. Many businesses have temporarily shut or are working with a skeleton staff to limit the spread of the virus. But, for those in engineering, you might find yourself with an increased workload, because engineers have certain facilities and skills that could help our National Health Service tackle COVID-19.

Engineering companies are gearing up to help tackle the pandemic, and while we have seen all kinds of creative solutions to key problems, here are just three: Design and manufacture respiratory equipment

The symptoms of the novel coronavirus have created a unique and urgent demand for many crucial pieces of healthcare equipment. For one, the need for respiratory ventilators is rapidly increasing as more and more hospitals find themselves without the resources to cope with a huge number of COVID-19 cases.

Provide personal protective equipment (PPE)

We are all feeling the immense pressure to take care when venturing out of the house and to only do so when necessary. But the doctors and nurses who are working on the frontline can't stay home, so it's absolutely crucial that they have the right personal PPE to keep them safe from the virus while assisting those suffering from the symptoms of COVID-19.

This has created an immediate demand for medical equipment, including N95 fluid-resistant face masks, disposable gloves, and surgical gowns and aprons that can help to limit the spread between doctors and coronavirus patients. In fact, these are considered so crucial in protecting healthcare professionals from contracting the virus themselves that GPs are beginning to call for the same protective measures to be brought into place rather than PPE just being offered to hospital staff.

Build temporary hospitals or donate materials

We seem to be following Wuhan's pattern of infection and the lifespan of the coronavirus, so it's expected that we will very shortly reach a peak where temporary hospitals are going to have to be built to cope with the rising number of cases. And, while NHS Nightingale has already been built in London to cope with the demand for care, there are still other things we can be doing to maximize the number of people getting access to treatment.

For example, donating any empty shipping containers to the healthcare system can mean there are many more temporary intensive care units (ICUs) for patients in life-threatening states to be treated. Along with this, being able to offer any other helpful materials and manpower to help make these will be appreciated.

How engineering companies are already helping

With an increased demand for everything from temporary hospitals to PPE and lifesaving medical equipment, many engineering companies have already started to lend a hand to help provide these critical supplies.

We are all being faced with a unique business challenge in one way or another but, when you work in engineering, you might be able to use your resources and skills to help tackle this pandemic. Whether you find inspiration from what other firms are doing, or you feel encouraged to help in another way, our healthcare system is sure to appreciate any assistance you can give.

Source: <https://www.electronicsspecifier.com/news/latest/how-engineering-is-helping-to-battle-covid-19>

Contributed by Mr. Aniket Patil

When Children's Real Lives are Part of Mathematics Lessons, It's Easier to Learn



The poor performance of many children in mathematics continues to absorb researchers around the world. Studies of the possible reasons have explored various perspectives, including children's thinking processes. But low achievement remains a problem worldwide.

It's a problem because mathematics is the bedrock for the development of scientific reasoning. It's taught at school to help children learn how to think about themselves and the world they live in. Not only is mathematics the basis of skills, it's also the basis of attitudes that make an individual functional and productive in society. It's a tool for solving problems at every level – but not everyone manages to use the tool easily or effectively.

Causes of poor performance in maths

Many factors have been considered as reasons for this performance. Several researchers have highlighted poor quality instructional technique employed by the teachers. My own work suggests the main reason is that lessons aren't centered on pupils and activities.

Although changes have been made over the years to make teaching more child-centered, mathematics outcomes don't seem to have improved. Something still seems to be missing.

I believe it's because teaching strategies don't always consider the real-life experience of the learners: activities or situations the pupils are familiar with in their everyday life and that they bring to the classroom. In my view, making these activities part of the lesson helps learners to relate maths to their lives and this makes maths topics easier to understand and remember. Making mathematics lessons fun and active also reduces tension in the classroom. I came up with a strategy which relates the real-life experience of the learners to the mathematics topic taught.

In this approach, teachers help learners to recognize where mathematics topics are needed in everyday life. New knowledge is built on what exists in the child's experience. Group activities are encouraged, and children can even learn things that the teacher didn't plan. Children are more in charge of the pace of their learning and can become confident in their problem-solving skills.

I've also come up with an idea of a fun activity to help primary school children to remember mathematics principles, formulas and procedures. It comprises song tracks with mathematics ideas, principles, and procedures. The idea is to use hip-hop music with lyrics about mathematics topics. The success of this activity in improving mathematics performance hasn't been tested yet but I plan to conduct research to assess it in future.

Link: <https://theconversation.com/when-childrens-real-lives-are-part-of-maths-lessons-its-easier-to-learn-133087>

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