

The changing face of engineering in a post-COVID world: Q&A with Maheshwara Chaitanya

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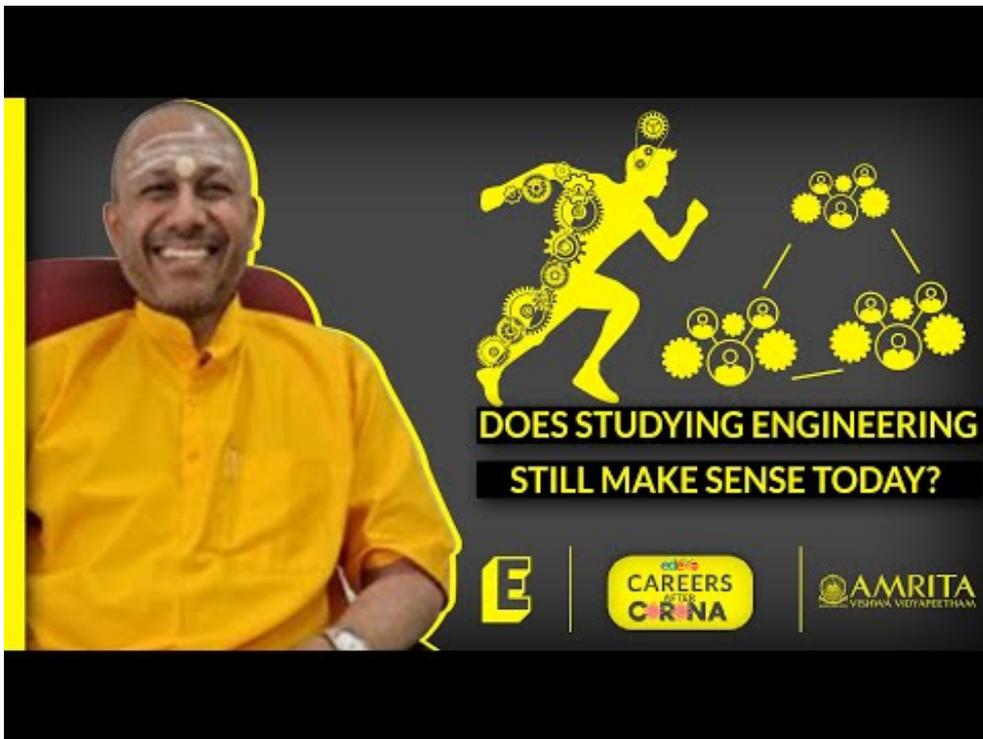
INSIDE ENGINEERING 2020: HOW ENGINEERING LOOKS ON A SOCIALLY-DISTANCED PLANET



Br Maheshwara Chaitanya gives us his insights | (Pic: Express)

What is the future of engineering? Will engineers have jobs in a post-COVID world or will they need to equip themselves with new skills first? How will core engineering actually be taught online? — these and many other questions are haunting students, parents, teachers and even the educational institutions. Indeed, the future is uncertain, but that doesn't mean it is dreadful.

To shed light on the current system of Engineering education in the context of the ongoing pandemic, Chairman of BTech Admissions from the Amrita School of Engineering, Amrita Vishwa Vidyapeetham, **Maheshwara Chaitanya** offers us his insights on **Inside Engineering 2020: How Much Will the Face of Engineering Education Change on a Socially-Distanced Planet**. Read on to find out what he has to say about post-COVID campuses, the future job market and online learning. Excerpts from an insightful conversation:



Watch Video At: <https://youtu.be/w4u4O7TXdag>

Do you think it's a better idea if students take up a PG degree, even if they hadn't planned for it so that they can graduate in a year or two when the job market will be better?

It will depend on the branch they have pursued. For example, it is assumed that the general trend in the economy or the opinion of the industrial experts, is that firstly, there will be a boom in the manufacturing industry because of the need for healthcare equipment. Secondly, we are all moving towards online platforms for different needs, so naturally, we can expect a boom in e-commerce, online platforms and job opportunities, specifically in the area of Data Science and Data Analytics. Because once the entire data goes online, there is a huge scope for different kinds of predictions. So the students who are in Computer Science-related programmes, they will find jobs. But again this will depend on their skill sets.

About those who are in Communication or Electrical Engineering or similar kinds of circuit branches, I would suggest they go for PG programmes, especially in core engineering as companies have started working with educational institutions to recruit these students with PG. Again, this will also mean that it requires high skill sets. Those who have pursued Mechanical and similar branches will certainly have job opportunities but it will take another year, once the pandemic settles down and factories start refunctioning, perhaps with a lower number of employees. The underlined point is that if students passing out this year or next year are looking for a job, it is essential for them to have the required skill sets as expected by the industry.

Mechanical Engineers will find jobs one year from now

MAHESHWARA CHAITANYA
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When it comes to teaching online, do you think core engineering can really be taught effectively?

Certainly not. There are various solutions to this problem though. Firstly, students should have the fundamental understanding of the theoretical aspects. Secondly, they should be able to apply these theoretical concepts, whether they have learnt it online or offline. So once there is understanding, they have to find the ways it can be implemented. One of the ways to keep their learning on track is to use simulation softwares or virtual labs. There are many platforms that are offering training for Mechanical and even Aerospace engineers but once the situation is conducive or friendly, they should start looking for internship opportunities. It is not that everyone will bag internships, but at the same time, it is essential for them to look and try to implement what they have learnt in the classroom so that they are prepared for both theory and practical aspects.



Going online | (Pic: Internet)

Already, the sector is under duress, the general perception is that there is not much that teachers or educational institutions can do now. But can you give us an insight into how much of an impact is the lockdown having on educational institutions?

It is certain that there are teachers who are not equipped with the infrastructure required for online teaching. At the same time, there are alternatives that can be explored. For example, there are students who find it very difficult to get data connectivity in villages or stay in areas that suffer from frequent power cuts. But as an educational institution, we can certainly look for better methods of evaluation that already exist in the education sector like giving students home assignments or conducting a viva over the phone. This definitely requires a huge amount of effort from teachers. If they are not able to offer such evaluation systems, education institutions can ask students to take any online course offered by the government of India. Amrita Vishwa Vidyapeetham University has collaborated with Coursera hence, students and faculty members can log in and take up online courses. It is possible for us to evaluate on the basis of the results of the courses too. There are plenty of opportunities, it all depends on how you make use of them. There are hardly any students who don't have smartphones, maybe 1 per cent or less. So if we explore the opportunities on existing platforms, definitely evaluation can be done in a better way.

We need to find better evaluation methods with online teaching

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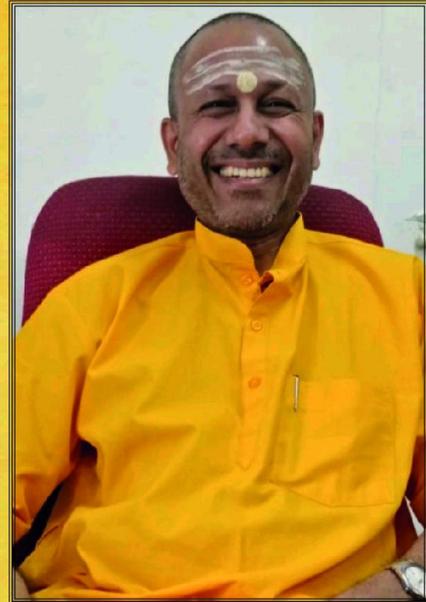
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What do you think will happen to those students who have already received their offer letters and were asked to join in June?

Primarily, it will depend on the sector of the employment. If it is the IT industry or core computing industry, the chances of rescinding offer letters is less. Perhaps there will be a pay cut or they won't be able to offer what was promised. To the students who are on the verge of losing the offer, I suggest that they should try to take up internships without expecting any pay. They can always try to upskill themselves via online courses. Certainly, it is possible to get a part-time job or hunt for a PG programme if their financial status allows them. The underlying point is that they should wait and keep a watch on the situation and be ready for when things get better. Till then, utilise online courses to upskill yourself so that once the opportunity comes, you are able to respond.

If you lose your job offer, take up an unpaid internship now

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What will the college canteen look like in a post-COVID world? How will the campus itself change?

Everything has changed, even the way we commute. In flights, public buses, metros and so on, we are not allowed to sit together. Similar sorts of norms might need to be implemented in hostels, classrooms and canteens. There are several aspects to it. It is about the mindsets of the students and parents and how they accept the changes. It is difficult to change mindsets and attitudes. For example, when the colour TV was introduced, people used to say it would spoil your eyes. Later, this mindset was changed. It is the same with smartphones and WhatsApp. Now, we are compelled to use them. It is the same with the education industry.

Nowadays, the teachers are compelled to learn about online platforms and students are compelled to take up online assignments and examinations with whatever glitches they have. So in future, I am sure that at least 50 per cent of the learning will move online. I'm sure that UGC or MHRD themselves will bring in a policy where the curriculum itself might have at least 20 to 30 per cent of credits to be earned through online courses. So blended learning and online teaching will definitely happen. But at the end of the day, it will all depend on the assessment and how good they are when it comes to assessments, analytical skills and industry-expected skill sets. It will depend on different people, their mindset and culture.

Nowadays, what I observe is that those who were apprehensive of smartphones, online payments and so on are now using it. So that's the attitude, we are now compelled. So things will change, learning and teaching will definitely change and it will be necessary and inevitable for the future generation. There is a lot of scope for engineering students because of the Improvement required in the healthcare system and there will be a lot of research that will take place post-pandemic, especially in the area of handling the epidemic systems.



Studying on campus | (Pic: Internet)

Is this shift to online learning for the better? Or will we lapse into our traditional methods once the situation is back to normal?

Whether it is better or not, it will certainly depend on the individual. For example, people use WhatsApp to communicate better. There are also people who use it to share funny videos or share fake news. So, it will depend on how we utilise it because anything created by man can be used or misused. It is the same with online technologies. Then there are the cyber laws. I remember when we started using Whatsapp, there was no issue as such with regard to sharing. But now, the government has brought in stringent measures. So it will all depend on the person.

In another example, suppose I'm pursuing a course via Coursera, I am the person who needs to upskill myself. So whenever the questions are posted on Coursera, or any online course platform, via a simple Google search I can find out the answer but then, I will not be able to prove my skills when I go for an interview. If I want to use it for the

another view point. MNCs used to conduct mass recruitments. Now you won't find it because now they need skilled students who are ready to accept the technology. Once AI, Deep Learning, ML and a few other technologies started encroaching different domains, in the sense that you cannot say that a Computer Science engineer is expected to work only in the IT industry. He could be working in the healthcare industry because he should be able to handle the data.

So that is the case now, it is changing, students will have to think from an interdisciplinary point of view. We all know that the younger generation are more tech-savvy now so we have started programming kids in such a way that they cannot deny the technical deny technology. Once they come to schools or once they come to the college's whether the teachers are ready to accept it, that matters. It is not the matter of non-availability of jobs, it is the matter of the not-availability of skilled engineers.



**There are jobs
even now, but
very few skilled
engineers today**

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Departments like UGC and NAAC tell us that there are institutions that are of low-quality but we need them in a country like India. Your comments on this?

There are other aspects to it. When the industries start offering good or high salaries for graduates who are just 21 years old, they will jump into the industry. And there is naturally a lack of experienced or good faculty members required for the academic domain. There is no balance. Recently, only when the central government started hiking the salary of the teachers, then there is a kind of interest but even then I will say that it is the mindset of the academic community.

Careers After Corona is a series that has been curated and produced by EdexLive in partnership with Amrita Vishwa Vidyapeetham and Amrita School of Engineering