



# What Price Good Engineering Education?

**I**t's a common refrain across the country: Only 25% of our engineering graduates are employable. Usually, all detractors alike – students, parents, industry leaders and politicians – make private engineering colleges the whipping boys for this state of affairs. But shouldn't state governments also be held responsible?

All states have a committee to set tuition fees in engineering colleges. These committees invariably set such low fees that it's impossible for private schools to pay even the minimum that governments pay their own teachers.

Let's do some back-of-the-envelope calculations on this. AICTE stipulates that the teacher-student ratio be 1 to 15. The Council further requires that the ratio of teachers in terms of professors, associate professors and assistant professors be 1 to 2 to 4. If we combine these two regulatory requirements, it's clear that for 105 students, we need at least one professor, two associate professors and four assistant professors.

If an engineering college has to provide quality of education comparable to the lowest-level government institutes, it must have similar faculty

numbers. This means it has to pay salaries similar to what governments are paying today to their teachers in state engineering colleges. Looking at the total cost of hiring a professor today, after the adoption of the sixth pay commission recommendations, this amount is no less than ₹1.2million (including pay, cost of all perks, pension benefits, etc.). Similarly, an associate professor costs no less than ₹100,000 a year, and an assistant professor, ₹700,000.

So, for 105 students, the minimum salary outgo on faculty has to be ₹600,000 (12 + 10 \* 2 + 7 \* 4). Considering that at least a handful of professors – directors, deans, heads and the like – will be paid more, and everyone needs an annual increment, it is reasonable to assume at least ₹700,000 will be spent on faculty salaries alone, if all AICTE norms are followed and salary structure is the same as the government colleges.

## The Cost of Salaries

Typically, salaries are about a third of total costs in an engineering college. This includes salaries of

technical staff, administrative staff, outsourced staff for simple tasks and labs, and the basic infrastructure itself (assuming loans for basic infrastructure are paid through tuition).

The minimum cost of engineering education, therefore, will be about ₹200,000 a year. Doing a sanity check on this number, one notices the cost of education at lower-ranked National Institutes of Technology is indeed around this figure.

I'm very curious to know how fees committees in the states come up with numbers like ₹50,000 per year (or even less) as tuition fee at their engineering colleges, when anyone could compute these numbers so easily. What State governments are essentially saying is that they are not bothered about quality, and don't care about AICTE norms. Is there any wonder, then, that most graduates of these colleges are not employable?

The obvious question now is, if the cost is so high, and tuition so poor, then why is there a long queue of promoters interested in opening colleges? It's an important question. To answer it, one has to see the real operations of these colleges. They depend on a large number of ad hoc teachers who they'll pay as little as ₹100,000 a year. Typically, these are the poor-quality

graduates deemed unfit by industry for any kind of job. On top of this, no college maintains faculty, or any other resource, of the level AICTE expects. And, when a team of inspectors visits a college, the school either brings in top-up resources that day, or the team members who know the real state of fee regulation, ignore the shortcomings, and the whole charade continues.

Serious quality players do not want to enter the education sector, since the only way to operate in this environment is by violating guidelines and then paying bribes to avoid being caught. They will rather enter only as universities, as fee regulation is not yet applicable to them in most states. Though, it should be noted, that some states have started controlling fees charged by universities.

Not all is lost, however. There are things governments, promoters and the management of academic institutions can do to make access to quality engineering education more affordable.

In the next edition, I will talk about ways funding can be sourced to improve the quality of engineering courses. **EDU**

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**Dheeraj Sanghi**

Dr Sanghi is the former director of Laxmi Narayan Mittal Institute of Information Technology, Jaipur. He is a professor of computer science at IIT, Kanpur. Dr Sanghi has a BTech in computer science from IIT Kanpur and an MS and a PhD from University of Maryland, USA. He can be reached at [dheeraj.sanghi@edu-leaders.com](mailto:dheeraj.sanghi@edu-leaders.com)

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