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UNFINISHED MEALS

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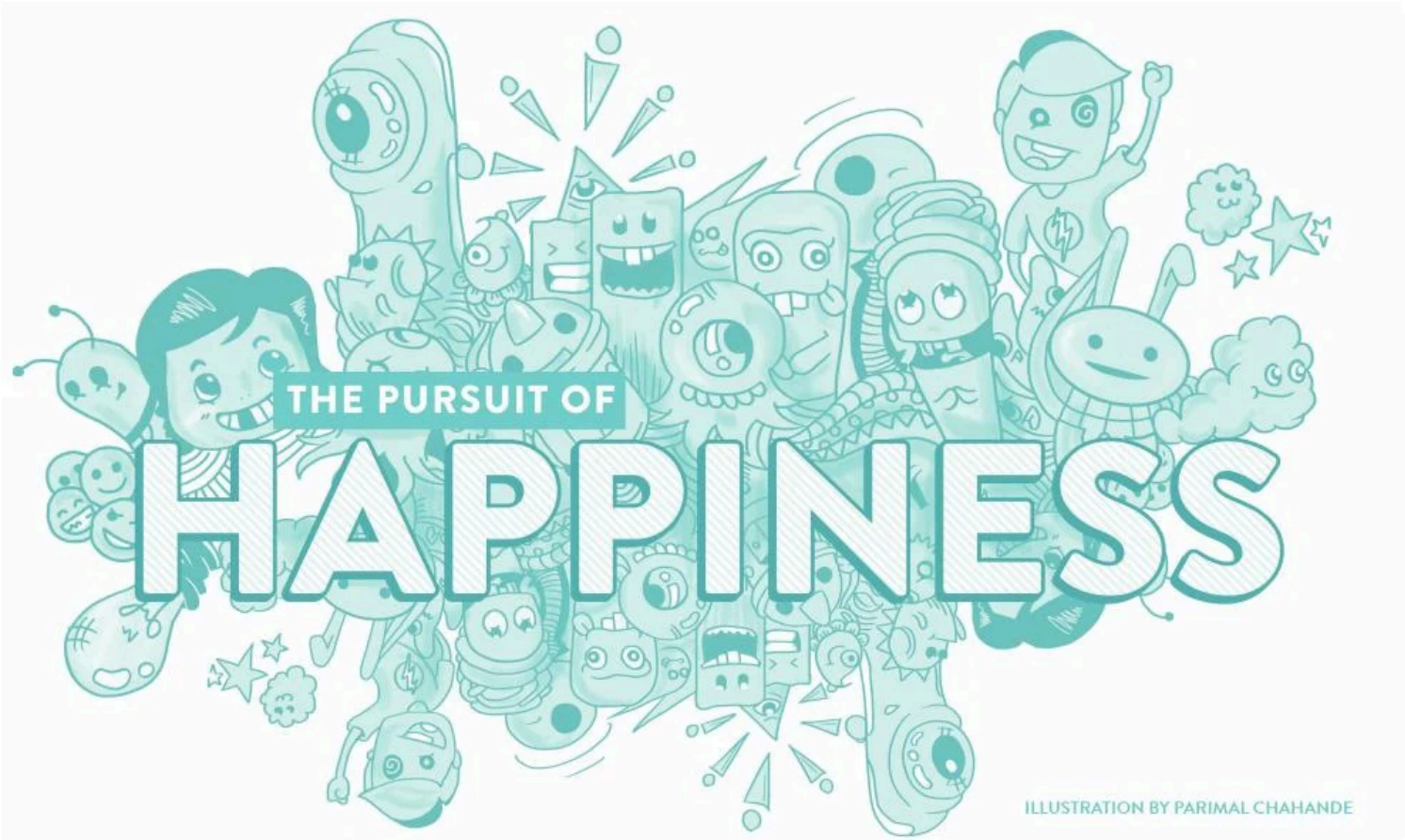


ILLUSTRATION BY PARIMAL CHAHANDE

ANAMIKA AGRAWAL, DEEPAK DILIPKUMAR, DEVANG THAKKAR, GALIGI PRASHANTH, GULAM SARWAR, MANU RATHI, NIRANJAN THAKURDESAI, PRASAD GANDOLE, RUCHA WALAWALKAR, SHREERANG JAVADEKAR, SHREYA GUPTA, SOHINEE GANGULY, VISHVESH VSK

With endsems already upon the students and the study rooms occupied to their fullest, everyone has been gripped by "The Semester Dream" - the one tiny hope in the back of their minds that somehow, despite not having studied as much as they would have liked, their CPI would see a spike this semester. This is the time of the year when the canteen owners witness business at its peak, courtesy stress-eating and an elevated caffeine intake, and sleep cycles go for a toss as there is a scramble to catch up with the seemingly unending endsem syllabus. Even though stress levels reach a spike during this period, a semester full of 'headlines and deadlines' ensures that the in-semester stress is no less. Constantly under pressure from parents, peers and especially themselves to fare better than the best, it isn't always a smooth ride for the students at IIT Bombay.

Measuring happiness or stress levels is at least as difficult as catching rare and elusive butterflies. But with trustable precedents to look up to, we correlated a few factors which are crucial during the students' stay here with their perception of contentment. Different individuals have different natural responses to stress-inducing stimuli they are subjected. As a result, it is inevitable that happiness and stress levels fluctuate across the student demographic. Insight set out to investigate this through a first-ever psychological survey on campus conducted in classrooms across three years for UGs (excluding fourth and fifth years) last year. Keep on reading to know the findings of this study.

The survey was adapted from the Oxford Happiness Questionnaire to appropriately gauge the happiness and stress levels here. To do this, we've focused primarily on the various factors that make the average IITian happy and those that lead to a receding hairline and a multitude of stress lines. With cases of self-harm and suicides cropping up at alarming frequencies across different IITs and the appointment of student counsellors to combat this predicament, it was imperative to know why the joy of getting into one's dream institution wears off even before it sets in.

HOW DO STRESS AND HAPPINESS VARY?

A year by year analysis shows that happiness levels on campus are highly accredited to happenings that are relevant to the general student population. It was observed that happiness levels dropped during the transition from the freshmen to the sophomore year but showed a steady rise subsequently.

One of the primary reasons for the drop in happiness levels is believed to be repentance towards academic negligence during the freshmen year. A major chunk of time in the freshman year is spent in exploring different activities resulting in laxity towards academics. The transition to the senior hostels later on means further sloppiness while adjusting to entirely new surroundings. Sophomore students alleged that difficulty in juggling between extra-curricular activities and academics led to increasing stress and decreasing happiness levels. Pressure of securing internships and third year PoRs was attributed as a possible facet to the increasing stress levels.

On probing a few junior year students, it was observed that happiness levels increased during the third year chiefly due to the internship period. Despite it being a stressful period in the early stages, securing internships translated to relief from parental and peer pressure for them. It was perceived that by this time, students learn how to cope with the increasing academic load and extra-curricular activities. Most of the students narrow down their interests to a few, thus being able to manage them efficiently.

SHATTERING THE NOTION THAT STUDENTS WITH LOWER CPI WOULD NATURALLY BE UNHAPPIER THAN THOSE WITH A DECENT ENOUGH CPI, IT WAS SEEN THAT STUDENTS WITH 8+ CPI WERE EQUALLY STRESSED OUT AND UNHAPPY.

IT WAS OBSERVED THAT HAPPINESS LEVELS DROPPED DURING THE TRANSITION FROM THE FRESHMAN TO THE SOPHOMORE YEAR BUT SHOWED A STEADY RISE SUBSEQUENTLY.

The survey imputes academic pressure as the cardinal reason for changes in happiness and stress levels. When happiness levels were compared to academic performance, it was seen that as CPI fell with passing semesters, happiness levels took a spiky fall while stress levels increased. Shattering the notion that students with lower CPI would naturally be unhappier than those with a decent enough CPI, it was seen that students with 8+ CPI were equally stressed out and unhappy when compared to those in the range of 5-7; the reason for it being that the former category students also felt the heat to maintain their golden numbers while attempting to outperform others.

A drop in attendance was observed with the passing years. Lack of interest in the subject and increasing dependence on self-study can be possible reasons behind students attending fewer lectures.

COPING MECHANISMS

With the amount of stress that affects the average IITian, it is necessary to inquire into how the student tries to alleviate it. To state briefly, coping mechanisms can be explained simply as an amalgamation of cognitive and behavioural efforts to reduce stress. Cognition, as a skill set, refers to a human's ability to process thoughts that help him in interpretation and analysis of situations. Besides measuring the levels of happiness of the students, the study also tries to estimate which are the most frequently-used coping mechanisms that students – consciously or unconsciously – apply in order to relieve themselves of the stress they face. Coping mechanisms, besides being positive (reformative) or negative (maladaptive), can be

ANOTHER MAJOR FINDING OF THIS STUDY WAS THAT AMONG THE STUDENTS WHO WERE ABLE TO COPE WITH THE STRESS, MOST OF THEM HAD EXCELLENT COGNITIVE ABILITIES.

basically divided into two categories – reactive and proactive coping. Reactive coping deals with the response to a particular stress while proactive coping deals with avoidance of the stressor. Since proactive mechanisms tend to be very subjective, in this survey, we look at the most common reactive mechanisms and how much they affect stress levels in students, thereby identifying the mechanisms that are significant predictors of stress (at 0.1 significance, 90% confidence interval).

One of the major negative mechanisms that has proved to be a crucial factor behind stress is social withdrawal. Students who clear the JEE are usually among the brightest in their respective schools and junior colleges. However, with relative grading in place, it is natural that some students fall behind others. This may result in students feeling ashamed of themselves and trying to avoid company. Social isolation has been found to exacerbate a person's feelings of low self-worth, shame and depression. According to the study, this mechanism – intended to reduce stresses – ends up leading to higher stress levels given the positive correlation between social withdrawal and stress levels.

Another major finding of this study was that among the students who were able to cope with the stress, most of them had excellent cognitive abilities. Cognitive restructuring is a psychotherapeutic process wherein the subject tries to identify what mechanisms wouldn't be beneficial to him/her. Cognitive skills, in this case, encompass a varied set of responses to a stress-inducing element wherein the subject tries to change his or her outlook towards the situation.

Self-criticism has been found prevalent in people who come from extremely competitive backgrounds and IITians would definitely end up in that list. Self-criticism has always been an integral factor behind the success of students in their formative years, because the awareness of one's own shortcomings is crucial for efforts towards self-improvement. However, self-criticism can only do so much to help one improve; in this study, it was seen that self-criticism was the most significant factor that leads to stress. Students with higher stress levels replied with multifarious responses, the most prominent of them being "I told myself that if I wasn't so careless, things like this wouldn't happen". It is of utmost necessity that students try to realise where their limits lie and how far they can stretch themselves just by pushing harder. Furthermore, according to a Harvard research study, chronic exposure to situations that involve self-criticism may lead to feelings of despondency, hopelessness, and pessimism, thereby elevating risk for suicide attempts.[1]

STUDENTS WITH HIGHER STRESS LEVELS REPLIED WITH MULTIFARIOUS RESPONSES, THE MOST PROMINENT OF THEM BEING "I TOLD MYSELF THAT IF I WASN'T SO CARELESS, THINGS LIKE THIS WOULDN'T HAPPEN".

The happiness levels obtained from this survey lie between 3.92 and 4.02 with the average happiness score being just above 4, indicating that the average IITB undergrad is moderately happy and satisfied. The extremely competitive atmosphere that these premier institutes entail often leads students to believe that one can only be happy when he/she is better than the rest. Students at the either extremes of the CPI spectrum are found to be the most stressed and if we dig deeper, this result isn't surprising at all. Constantly living up to societal and their own expectations, the high ranking students often have to make social and personal sacrifices in order to maintain their performance levels while on the other hand, there are students who have never faced such demanding and competitive atmosphere, and are not able to keep up with the rat race. Students with better cognitive skills are usually better at handling stress while the ones who face withdrawal symptoms are hit the worst by stress.

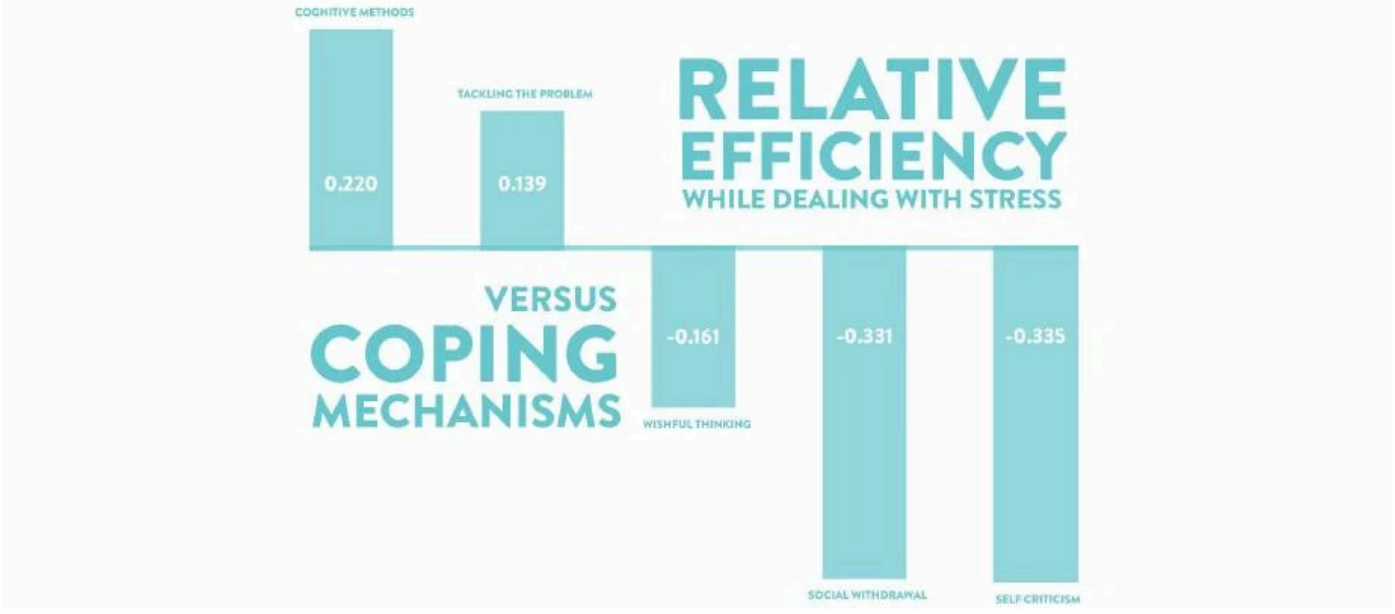
FROM THE COUNSELLORS' DESK

Stress is an emotion which is generally accompanied with anxiety, and is naturally present within all of us in some proportion. It helps us to be positive, which in turn determines our happiness levels.
We, as Counsellors, observe that both stress and anxiety, if in moderate proportion, are found to be healthy, and can help us accomplish/achieve our goals. It is only when the levels go below or beyond the desired proportion that one starts feeling uneasy, restless and unhappy.
If at any given point you feel that you need more energy to keep your stress and anxiety under control, it is best that you seek help from various sources the institute offers - your mentors, faculty advisors, guide and counsellors. As, a stitch in time saves nine.

HAPPINESS INDEX

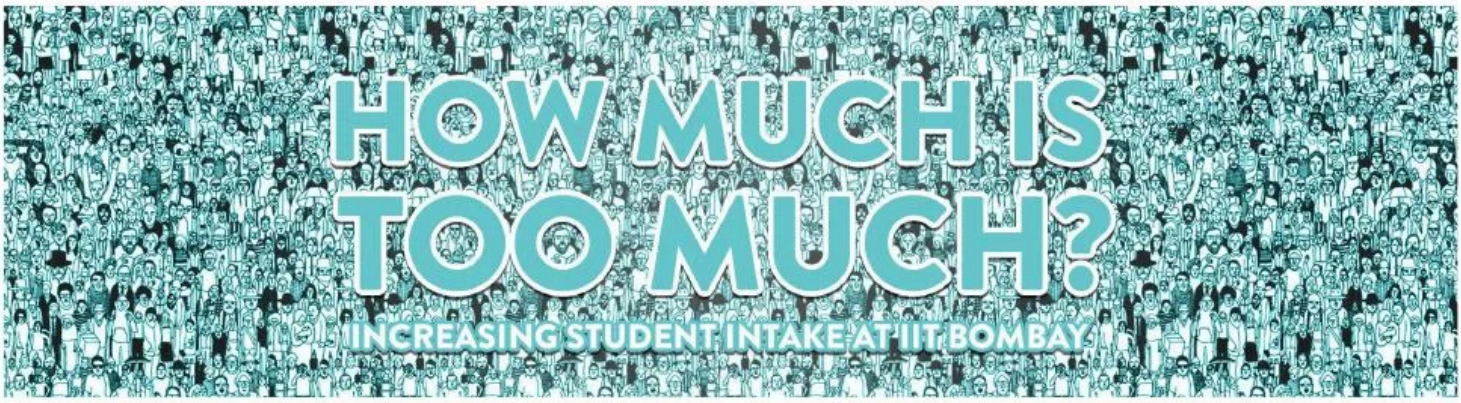
FIRST YEAR	SECOND YEAR	THIRD YEAR
4.02	3.92	3.94

THE INDEX IS MEASURED ON A SCALE OF 6. WITH 0 BEING VERY UNHAPPY, 4 BEING SATISFIED AND 6 BEING TOO HAPPY



We would like to extend a special vote of thanks to SOHINEE GANGULY (Research Scholar, HSS Department) and PROF. POOJA PURANG (Associate Professor, HSS Department) for their invaluable help in conducting the extensive study.

[1]Allen KJD, Hooley JM. Suicide Attempters Show a Maladaptive Response to Criticism, in The 27th Annual Meeting of the Society for Research in Psychopathology. The 27th Annual Meeting of the Society for Research in Psychopathology. Oakland, CA; 2013.



HOW MUCH IS TOO MUCH?

INCREASING STUDENT INTAKE AT IIT BOMBAY

ADITYA GUPTE, KUSH MOTWANI, RAAM SRIDHAR, SANDEEP UPADHYAY, SHREERANG JAVADEKAR, SWARNALI KUNDU, YASHIKA KAPOOR

The student population of IIT Bombay has increased significantly over the past few years. According to the Director's report, the period from 2009-10 to 2013-14 saw the UG population increase by 41% from 2,838 to 4,004, and the PG population shot up by a massive 66% - from 3,531 to 5,866. It is stipulated to grow to 7,601 by the academic year 2018-19. While accommodation has been an incessant problem, the increase in intake has also put a burden on numerous other resources. In this article, we take a deeper look at some of these issues.

ACCOMMODATION

The housing scenario has partially improved compared to what it was in past years, when even final year undergraduate and female PhD students had to stay in shared rooms. Apart from that, C-type quarters were allotted to M.Sc. entrants for about a semester for the 2012 as well as the 2013 batches. Compared to other IITs like IITM and IITKgp - where single rooms are provided to students from their sophomore year - accommodation provided to students at IITB is much more cramped. The anticipated increase of about 2,000 students by 2018-19 would translate to a requirement of two more H15-like hostels, the construction of which would roughly need around 2 to 3 years. In light of this, the proposed increase in strength will impose an additional burden on the housing infrastructure. While two new hostels are indeed in the pipeline, any unforeseen delay in the construction of these hostels will only exacerbate the situation.

A group of students who have been bearing the brunt of this housing crunch is the married research scholars (MRS). The problem has been partially alleviated this year after the allotment of the QIP building to MRS, but a significant number of scholars are still in the waitlist. A building with 400 apartments has been proposed as per the Dean IPS website, but the construction is yet to be started. So, the problem is here to stay for a few years.

With increasing number of students, the institute has also been hiring more faculty for past few years. While it helps in maintaining a healthy student-faculty ratio, it has also led to a shortfall in housing for the faculty. Currently, new faculty members are accommodated in guest houses for the first six months, after which they are shifted to the staff hostel near H11. It has been a frequently raised complaint that the living space of the 1BHK apartments in staff quarters is in no way enough for a family. In the current scenario, due to the lack of adequate faculty housing, professors have to stay in staff hostels for about two years, after which they are shifted to C type staff quarters although being eligible for B type flats usually given to faculty. Adding to these woes is the condition of the staff hostel - which can be described as 'dilapidated' at best.

When we talked to Sarthak Agrawal, General Secretary Hostel Affairs, about the current accommodation crunch, he pointed out that while the institute did face a scarcity of rooms while allocating accommodation to the incoming PG batch, both Master's and PhD students, this year, it was only in the period of overlap when PG freshers were joining and the passing out PhD and Master's students were staying back for their thesis defence. Now, according to the GSHA, most of the accommodation problems have been resolved. The situation in H10 has improved by leaps and bounds after the opening of the new wing. He added that married scholars have been given accommodation in QIP by shifting its present residents to the new wing. This has brought down the MRS accommodation waitlist from over 300 to 120. This figure will further go down once the new wing is completely constructed.

Regarding our queries about the anticipated shortage of housing, Prof. N. Venkatramani, Dean IPS (Infrastructure, Planning and Support) replied, "The tenders for hostels 17 and 18, and apartments for married research scholars, have already been floated, and are in the stage of evaluation and acceptance. The funds are yet to be allocated." However, he also assured that once the tendering process is complete and funds are released, the new infrastructure will be ready within two years.

RESEARCH INFRASTRUCTURE

Another resource which is burdened is research equipment. Students are facing several delays in their projects due to the lack of availability of equipment. As an example, for availing FEG-SEM, a highly sought-after tool for characterisation of various kinds of materials in the Center for Research in Nanotechnology and Science (CRNTS), you'll have to wait for two to three weeks to use the tool if you requisition it now. For a student, these delays accumulate over time, eventually leading to a deferment of the award of PhDs, or incomplete research in the duration of a project.

Another criterion where IIT Bombay has lagged behind compared to other top universities is the student-faculty ratio. The increase in faculty numbers has more than been offset by the increase in student intake. The SFR dropped from 15.3 in 2013 to 14.75 in 2015 after an increase in faculty strength from 565 to 669. However, for a healthy SFR of 10, IIT Bombay faces a shortage of over 300 faculty members. The increase in student intake has led to professors in some departments guiding over 20 PhD and Master's students at a given point of time. Many students lament the lack of adequate attention given to their projects by their guides as a result of this.

THE SFR DROPPED FROM 15.3 IN 2013 TO 14.75 IN 2015 AFTER AN INCREASE IN FACULTY STRENGTH FROM 565 TO 669. HOWEVER, FOR A HEALTHY SFR OF 10, IIT BOMBAY FACES A SHORTAGE OF OVER 300 FACULTY MEMBERS.

In the long run, IIT Bombay envisions to posit itself as a research institute. The major motive behind increasing the intake has been to increase the quantum of research going on in the institute. While the number of publications has seen an increase in the past few years, on calculating the research per capita, we found that the numbers showed decreasing trends from 2009 to 2012, only to increase in the subsequent years, which is definitely a positive sign for the institute. However, considering the existing stress on research infrastructure, any increase in intake will have to be planned meticulously to maintain the numbers.

INTERNET

In the early months of this semester, the institute faced a recurring issue of poor network speeds and Internet service outages. Digging into the reasons behind this issue, we found that the low speeds were due to the heavy load on the servers caused by an increase in the overall usage. While it remains unclear whether this load increased due to malicious activity or an increase in the number of users, Pritam Baral, a senior student involved in resolving the issue, asserts, "The increased load made internet.iitb servers hit their limits. This prompted the institute to increase the artificial capacity of the servers to handle this increased demand. The transition to the new server capacity required several test-runs, resulting in sluggish speeds and frequent outages."

THE POOR NETWORK SPEEDS WERE DUE TO THE HEAVY LOAD ON THE SERVERS CAUSED BY AN INCREASE IN THE OVERALL USAGE.

THE ROAD AHEAD

The primary reason of these problems is the absence of a long-term strategy of successive governments towards higher education. Around 2008-09, the HRD ministry made certain recommendations to increase research output at IITs, and the institutes followed suit, due to which the number of PhD scholars increased. While the goal in itself is worth pursuing, the execution has arguably been shoddy. The institute needs to frame a better policy to streamline the development of infrastructure, so that we are ready to welcome the incoming students which are increasing in number each year rather than playing catch up on the resources. The institute boasts of the best research infrastructure of the country, but the underlying inefficiencies only hurt per capita productivity. The crunch of resources also entails using them in a judicious manner in order to optimize their usage and longevity.

YEARS	2009-2010		2013-2014		2018-2019
UG INTAKE	2,838	↑ 41% RISE	4,004		—
PG INTAKE	3,531	↑ 66% RISE	5,866	↑ 30% RISE (STIPULATED)	7,601

IITB: BANG FOR YOUR BUCK?

ILLUSTRATION BY SHRADDHA RANA

ANKIT PATIL, CHINMAY SANKHE, DEVANG THAKKAR, OJASWA GARG, PRANJAL CHOKHANI, RACHIL MALIWAL

While half the Internet is filled with articles questioning the humongous subsidies that IIT students enjoy, the other half has equally long pieces justifying them. With arguments such as 'sponging off taxpayers' money' pitted against 'generating thousands of jobs', this debate seems to be a never-ending affair. However, the important point to be noted here is the fact that even after these subsidies, the cost of living at IIT Bombay has constantly been on the rise. Consider the case of the gigantic hike in the semester tuition fee for the undergraduate program – from Rs. 25,000 for the 2012 UG batch to Rs. 45,000 for the 2013 UG batch – an 80% increase over a year, which is extremely high a value even when accounted for inflation. With proposals to raise this number upto Rs. 1.25 lakhs from the upcoming batch, we take a look at the major recommendations made for the revamping of the fee structure, the 'invisible' costs that bother students from economically weaker backgrounds and the intangible returns on your investments.

THE MAGNA CARTA THAT WASN'T IMPLEMENTED?

In February 2010, the Ministry of Human Resources Development (MHRD) had set up a committee to devise a roadmap to enable financial autonomy for the IITs. The deliberations of this committee headed by Dr. Anil Kakodkar culminated into a report titled "Taking IITs to Excellence and Greater Relevance" in April 2011. According to the report, the IITs would function optimally if the annual fees were raised to Rs. 2-2.5 lakhs, which would be a reasonable amount considering "the high demand for IIT graduates and the salary that an IITB.Tech is expected to get". A proposal to extend the 100% tuition fee waiver to all reserved category students* implied that only a maximum of 49% of the students would have to pay the whole amount of fees. This number would even decrease when the merit-cum-means scholarships are taken into consideration. The report also recommended complete funding for the Master's and the PhD programmes, saying that strong PG programmes are necessary to build the technological and research capital of the country.

There have been numerous debates on whether the Kakodkar committee report would actually help in establishing financial autonomy for IITs, and more importantly, whether it would adversely affect the middle class. Households that earn just more than around Rs. 4.5 lakhs per annum would be ineligible for the MCM scholarships, and hence, would bear the brunt the most. The report suggested the introduction of easy amortised, no-collateral loans that could be paid off after students get placed as compensation for increasing the tuition fees. This, however, disregards the faction of students who opt for a PhD or venture into entrepreneurship, both of which the government vehemently vouches for.

ACCORDING TO THE KAKODKAR COMMITTEE REPORT, THE IITS WOULD FUNCTION OPTIMALLY IF THE ANNUAL FEES WERE RAISED TO RS. 2-2.5 LAKHS.

The Kakodkar committee report wasn't implemented immediately, and was kept aside for future contemplation. However, the institute did impose an 80% fee hike on the tuition fees applicable from the 2013 batch, bringing the amount to its current value of Rs. 45,000 per semester.

THE INVISIBLE HAND DIGGING INTO YOUR WALLETS

"PPO bhi lag gaya, treat kab hai?", *"Chal Sophie treat hai aaj raat, paise nikaal ke rakhna"*, *"Intern lag gayi yaar, ab toh treat de de"* - statements such as these are commonplace in senior hostels. Hostel traditions such as sophie, birthday, and internship treats are known to be once-in-a-blue-moon occasions where students are known to let their hair down. These extravagant affairs are hardly easy on the wallet, especially towards the end of the first and second years, when the 'handing-over' treats take place. Handing-over treats, meant to celebrate the takeover of the council by the incoming team and promote junior-senior "interaction", are usually funded by the incoming councils, and have an infamous reputation of having some of the biggest receipts you'd ever witness in your student life. For a student coming from an economically backward family, these times can be extremely difficult, especially in the case of handing-over and sophie treats, since it is quite unnerving for freshies to talk to a senior to negotiate the contribution for the treat. An undergraduate who wished to remain anonymous said that he had a friend who did not apply for a PoR (Position of Responsibility) because he could not have afforded to pay his share for the handing over. This, however, isn't as widespread a problem as it seems, since students are usually open to adjusting in case any junior/ peer lets them know of any financial problems.

Students who cannot incur the high costs of pre-treats, on-ground treats and post-treats often shy away from contesting in elections for institute level PoRs. It is known that the expenditure of a winning candidate can cross tens of thousands in the election extravaganza. However, the scenario is much better in case of nominated posts. The heads of Institute bodies generally ensure that no member of their team is in an awkward position, often pitching for their share or collecting payments in installments. When it comes to monetary issues, even peers are understanding. There have been numerous instances when the contribution of students unable to afford the expenses of treats was taken care of by their wingmates. Although the incessant number of treats have always been a cause of vexation for those who cannot afford them, there is some respite in the form of their peers and seniors.

BRAND IITB - IS IT WORTH YOUR PARENTS' MONEY?

People have time and again protested against the fee hikes that have been brought into effect in the past, for multifarious reasons of their own. 'IITs be Greedy' – an article on the Kakodkar committee report covered in Insight Print Edition 16.2 had Prof. Ballal of MEMS point out that some students enrol at IITs 'primarily for the brand value', and that they shouldn't complain since 'the brand value of IITs is worth more than their fees'. This brand image is palpable in placements and internships. In fact, it has such a huge impact that an alumnus mentioned that start-ups with founding members from the older IITs – especially IIT Bombay, courtesy the 'Powai Valley' culture – are more likely to get investments than those that don't. Another perk of being at IIT Bombay is the access to a wide alumni network that is really enthusiastic about giving back to the institute. Looking at the positives, it can very well be said that the fees we pay are but a fraction of the value of the infrastructure, the education, the exposure and the brand we receive with our degree at the end of our years here.

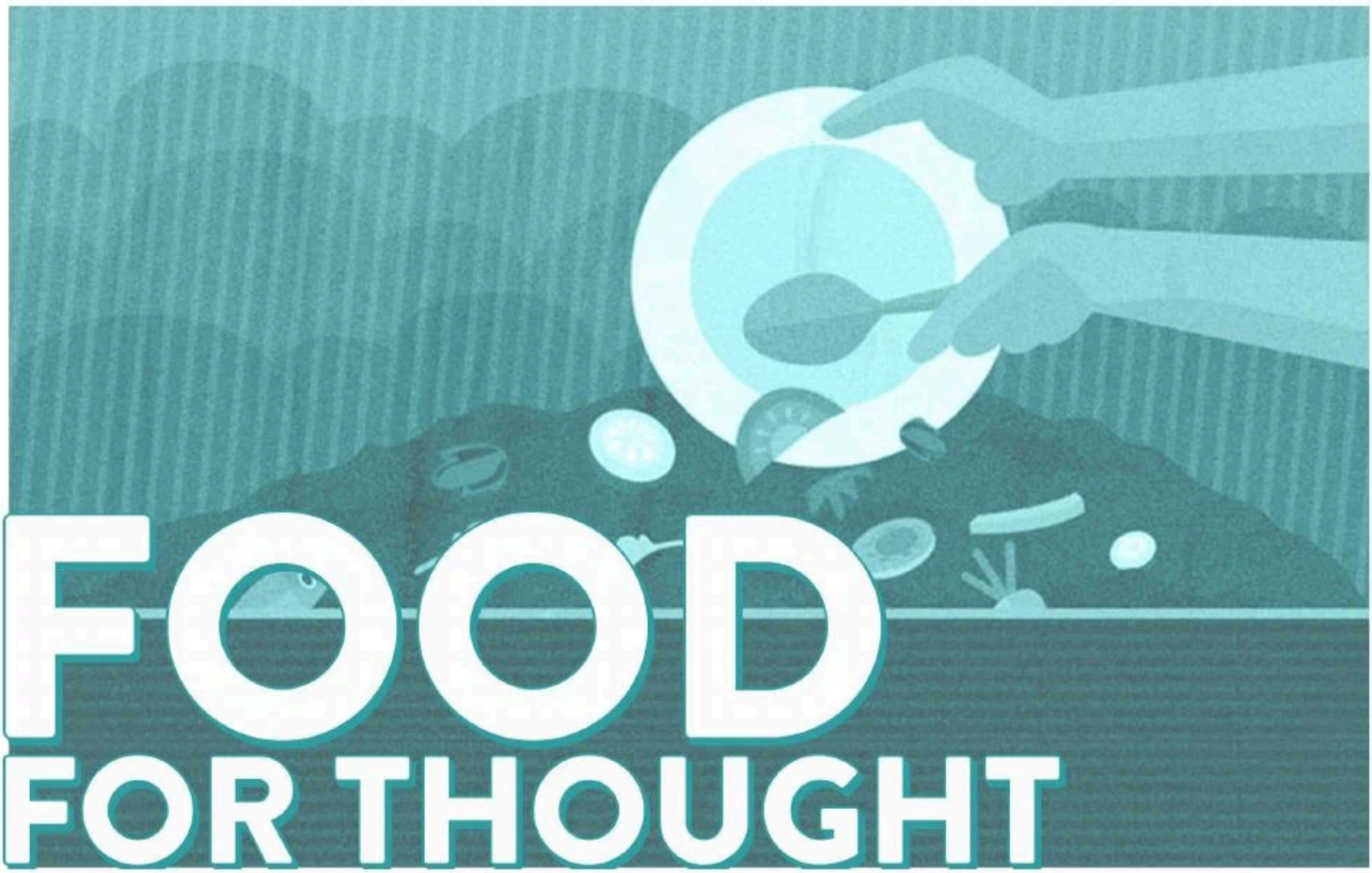
FEE STRUCTURE ACROSS IITS

IIT	SEMESTER FEES
BOMBAY	₹ 59,750
DELHI	₹ 52,535
MADRAS	₹ 52,599
KANPUR	₹ 55,504
KHARAGPUR	₹ 57,876
ROORKEE	₹ 56,600
GUWAHATI	₹ 50,350
INDORE	₹ 58,550
JODHPUR	₹ 61,075
BHUBANESHWAR	₹ 58,500

FEES OVER YEARS AT IIT B

YEAR	TUITION FEES
2008	₹ 13,500
2009 - 2013	₹ 25,000
2013 - 2016	₹ 45,000
2016 (PROPOSED)	₹ 1,25,000

*Currently, students only from the SC, ST and PD categories enjoy a 100% tuition fee waiver.



FOOD FOR THOUGHT

APARAJEYA DASH, KARTHIK SANKARAN, PARTH SHRIMALI, PRANAV IYER, SANDEEP UPADHYAY AND SHREERANG JAVADEKAR

India is one of the world's hungriest nations, ranking 55 out of 76 countries in the Global Hunger Index published by the World Food Programme. Yet, the country wastes food worth Rs. 13,000 crores every year. Mumbai alone wastes around 9.6 lakh kgs of fruits and vegetables daily.

Closer home, the statistics are just as depressing. On an average, by conservative estimates, every hostel's mess and its commune wastes something between 60 to 100 kgs* of food every day. Adding the numbers of all the sixteen hostels over a year (assuming that every hostel mess runs for 9 months) gives a figure of 260 tons to 432 tons - this is the annual food wastage from hostels. On calculating the per capita wastage inside IITB, we found out that every student wastes 0.10 kgs to 0.16 kgs of food per day, which is considerably higher than Mumbai's daily average of 0.08 kgs. Mind you, these numbers could be even more depressing as most hostels don't have a stringent measuring policy, or is poorly enforced even if they have one. The fact that this figure excludes the food wasted in canteens and institute-wide eateries provides no succour.

A cursory glance at the wasted food sheds some light on the trends in consumption. The bulk of food that gets wasted is in the form of staples like rice, dal and vegetables. Special food items like non-vegetarian dishes, sweets, salads, etc. generally do not contribute significantly to the wastage. Although the wastage also comprises of unavoidable things like fruit peels, egg shells, etc., this wastage is dwarfed when compared to the regular food waste.

"IT'S NOT MY PROBLEM"

The indiscriminate wastage of food can majorly be blamed on miscalculated estimates by caterers and students' hopefulness for tasty food which more often than not turns out to be insipid. Often, students take huge helpings of food which only finds its way down the trash bins rather than their tummies. Examples of students throwing away plates full of food are commonplace. While failing to acknowledge that we avail a hostel subsidy of Rs. 6,000 per semester, which also includes the contribution to the mess, the fact that students pay for the food makes them impervious to any meaningful discourse. Indifferent comments like "*Abbe khaana ganda hai*", "*Sirf mere phekne se thodi na kuch hota hai*", "I pay my share. What is your problem?", etc. reveal the deep-seated lack of responsibility in our student community. An interview with members of Manav Jeevan Seva Trust, a child-welfare NGO in Ghatkopar, opened our eyes to the fact that the amount of food that IITB wastes on a daily basis is more than sufficient to cater to around 300 children. Students resort to shifting the blame on the messes and the caterers. However, the current scenario is pretty different. Almost all the hostels in the institute now have private caterers, except for hostel 15 and 16, whose messes are run by government workers. This has enabled a reduction in the food wastage, since profit-driven private caterers have been able to empirically estimate the number of students having food at a given point of time rather accurately. After the regular mess hours, the remaining food is consumed by the hostel and mess workers. In fact, on investigation of the wastage figures in each hostel, it was found that in almost every hostel, the wastage by students far exceeds the excess food leftovers by the caterers.

DISPOSAL OF WASTED FOOD

Just as no one bothers to know what happens to the tons of waste we throw in the dustbins everyday, food wastage is also 'someone else's problem'. Fortunately however, the institute has a biogas plant which churns out some useful electricity from this wasted food. A technology developed at BARC by Dr. Sharad Kale, who also featured in Satyamev Jayate, the biogas plant has a capacity of recycling 2 tons of wet waste per day. The biogas generated is supplied to the Hostel 3 mess through a yellow pipeline. Hostel 3 uses it for purposes like heating water, boiling potatoes, rice, etc. which require slow heating.The constraint on the utility of biogas, for example in cooking, is because of its lower calorific value than the usual LPG. The biogas plant has also suffered technical issues like 'acidification' (the pH needs to be maintained for bacteria to thrive) twice in the last 4 months which does not allow it to operate at full capacity. Trucks arrive at hostels at different times to collect the waste generated and transport it to the plant for generating electricity. However, the fact that many hostels do not have an active waste segregation policy or lack one completely, is something that is detrimental to this solution. In these hostels, such as hostels 15 and 16, fruit peels, chicken bones, plastic cups, partaken food, etc. are thrown into the same bins. Needless to say, the usage of waste as fodder for the biogas plants no way compensates for the abysmal apathy shown by students towards food.

WHAT COULD BE DONE?

One obvious idea would be donating the excess food. Food donation itself is not an alien concept in Mumbai given that organisations such as Robin Hood Army and Manav Jeevan Seva Trust have been able to make good use of this knowledge by arranging to donate the surplus food left over in restaurants and functions. Members of Manav Jeevan Seva Trust even proposed to arrange for collection of surplus food, if any, from the hostels, and provide the same to a girls' orphanage run by the trust. However, owing to the fact that the privatisation of messes has resulted in a drastic reduction in consumable leftover food, there is hardly any scope of donating excess food to the poor. Few caterers, like the one handling the H6 mess, suggested to prepare a little extra food, if the idea of donating excess food to the

* This is the sum of personal wastage by students and leftover food.

poor was implemented. However, the institute has a strict policy against food donation. While there is no documented rule against food donation, the institute enforces it as a standard with an intent to avoid any malignant allegation against its name. In 2011, hostels 12, 13 and 14 reported about 300 cases of food poisoning allegedly caused by the consumption of Chinese food cooked in the mess, which created a huge furore. Discouraged by the incident, the institute has rejected the idea of food donation. While one could argue that it would be ethically wrong to be discouraged by such incidents and not support such a noble solution, the institute justifies its stand by maintaining that any untoward incident would result in a blow to its reputation, which in itself is a very legitimate concern.

A Pay-Per-Meal (PPM) system in the messes, suggested in the past to provide a freedom of choice to the students, could be a possible solution to the problem of wastage due to overestimation by mess caterers. Until recently, the idea was being rejected by the authorities citing health concerns considering that the students opting out of the mess might indulge in unhealthy food habits. A different approach was being considered by the Hostel Affairs council under the banner of 'Choose Your Meal' system. However, earlier this year, the PPM system was given a green light by the authorities after due deliberations between the HA council and the administration, including the then newly appointed DoSA. As a result, a few weeks ago, the institute agreed to allow students to opt out of the mess facility. Effective from November 1, 2015, the students are now allowed to do so after incurring a monthly expense of Rs 1,300 which will go towards maintaining the hostel mess facility. A student can continue availing the mess facility or can choose to opt out and pay only when he/ she wants to eat in the mess. This system would be reviewed by the Hostel Warden Council after a span of 6 months. Whether this move helps in the reduction of food wastage or not, is something only time will tell.

A better solution has come from the student community in the form of an IDC project undertaken by Ms. Jayati Bandyopadhyay. Ms. Jayati has set up an interactive audio platform with a weighing machine which would dish out messages according to the food thrown into the bin, while at the same time maintaining a log of the food wasted. Thus, if someone wastes a considerable amount of food, he/ she would hear a message that appeals to his/ her conscience through a likely reference to the prevalent global hunger. A simple and innovative way to create a sense of responsibility among students, this could be taken a step further by creating a system of dynamic feedback which could help students decide on the quality and taste of food. Such a feedback system could also be created manually in the form of Good, Average and Bad card boxes which could be deposited near the mess counter. The number of cards in either box could be an indicator of the food quality which could potentially be very helpful in solving the wastage from the plate.

No matter how innovative and effective the solutions we come up with are, the best way to prevent wastage of food is to bring that habit in oneself. We might waste a few morsels of rice or a chapati or two, we might frown at the "taste" of the mess food and throw it away without batting an eyelid, but there are scores of people for whom *that* food is nothing short of a miracle.

HOSTEL	AVERAGE DAILY FOOD WASTAGE	AVERAGE YEARLY FOOD WASTAGE
1	60 KGS PER DAY	16,200 KGS PER YEAR
2	65 KGS PER DAY	17,550 KGS PER YEAR
3	53 KGS PER DAY	14,310 KGS PER YEAR
4	57 KGS PER DAY	15,390 KGS PER YEAR
5	70 KGS PER DAY	18,900 KGS PER YEAR
6	80 KGS PER DAY	21,600 KGS PER YEAR
7	75 KGS PER DAY	20,250 KGS PER YEAR
8	63 KGS PER DAY	17,010 KGS PER YEAR
9	87 KGS PER DAY	23,490 KGS PER YEAR
10	55 KGS PER DAY	14,850 KGS PER YEAR
11	62 KGS PER DAY	16,740 KGS PER YEAR
12, 13, 14	225 KGS PER DAY	60,750 KGS PER YEAR
TOTAL	952 KGS PER DAY	2,57,040 KGS PER YEAR

SOURCE:- HTTPS://HS699.WORDPRESS.COM/CATEGORY/FACTS-RELATED-TO-IIT-BOMBAY/

THE ABOVE TABLE HIGHLIGHTS THE FOOD WASTAGE FROM RESPECTIVE HOSTELS IN 2011. THE TOTAL WASTAGE FROM ALL THESE HOSTELS SUMS UP TO 952 KGS. IF WE ADD THE WASTAGE FROM HOSTELS 15 AND 16, AROUND 200-250 KGS PER DAY, TO THIS NUMBER, THE QUANTITY OF FOOD WASTED 4 YEARS BACK IS COMPARABLE TO THE WASTAGE IN 2015.
AN INTERESTING POINT TO NOTE HERE IS THAT WHILE MOST HOSTELS HAVE BEEN PRIVATIZED IN THIS PERIOD AND CLAIM THAT THE CATERER-LEVEL WASTAGE HAS REDUCED, THE TOTAL WASTAGE HASN'T CHANGED SIGNIFICANTLY. IN CLOSURE, THIS SUGGESTS THAT THE MAJOR CONTRIBUTION TO FOOD WASTAGE HAS BEEN FROM THE STUDENTS' FRONT. THE FACT THAT MANY STUDENTS JUSTIFY FOOD WASTAGE BECAUSE OF THE QUALITY AND TASTE OF FOOD, IS THUS DEBATABLE.

WINDS OF CHANGE

AMITH R, EESHAN MALHOTRA, PRATYARTH RAO, RAHUL JAIN, SHARDUL VAIDYA, SHREYA SRIDHAR, SRAVAN PATCHALA, SREENATH DAMA

Change is the only constant, they say. With sweeping changes in the past couple of years in Institute rules, we've noticed some great changes in the way Insti operates. The infiltration of social media and dedicated fresher hostels have seen lifestyle changes in the Insti microcosm. We look at these changes and the possible reasons behind them. Small piece of advice to some of our newer readers - if you do not understand what we're talking about, take this opportunity to walk over to the senior next door, and do ask them!

THE WING AND THE HOSTEL

An adverse effect of Insti's growing dependence on social media has been the decline of social structures like the wing and the hostel. With students preferring to communicate online, the custom of evening lukkha in the wing is long gone. Seniors confess that they do not have any idea who the newbies in the wing are. The infamous sophie treats, for long the ice-breaking event between wing veterans and sophomores, is dying a slow painful death. Students blame the negativity attached to 'intros' as one reason why senior-junior interaction in hostels is dying.

The past couple of years have also seen Hostel Secretary posts go uncontested. The Soc Secy post, for long considered the Holy Grail of Hostel senti among sophomores, now sees actual elections based on Manifesto points and Soapboxes, instead of being based on who can wax eloquent the most about Hostel 4's ancestors at the top of his voice. Some of the older members on this panel visibly shuddered when notified of this fact.

DC++ ON DEATHBED

With changing times, the DC++ culture has been dying a slow death. Until 3 years back, more than 10 hubs being simultaneously online wouldn't have been an anomaly; but having more than 4 hubs online is a phenomenon rarely seen today. In wings that proudly maintained hubs, seniors would pass on information about maintaining DC++ hubs to tech-enthusiastic sophies and thirdies. People often maintained separate hard-drive partitions and external HDD filled with exclusive and assorted content for sharing on DC++. This would be accompanied by an equally active request-and-share Facebook group – DC++@IITB.

The hubs that remain online today don't live up to the quality of yesteryears, with fewer people online, dispersed among the various hubs, and a higher minimum upload quota. Online streaming of the same material has surged, consuming more internet bandwidth available to us, and lower download speeds as compared to DC++.

One can only marvel at the variety of content DC++ used to have – comics, films, TV serials, *bhajans,* complete course content - previous exam papers, ebooks and solution manuals, assorted exam and placement preparation materials, and recordings of institute events.

Files are data. Data is information. Information is knowledge. And knowledge increases with sharing. DC++ is a collective social resource for the residents of institute – one that becomes more valuable with more participation. Revival of this invaluable resource requires us to take some small steps for the greater good of the institute as a collective unit, and us, individually, in turn.

HAVING MORE THAN 4 DC++ HUBS ONLINE IS A PHENOMENON RARELY SEEN TODAY.

BOOKS...

What books? With pretty much all content being available online, and a huge number of professors preferring a Powerpoint presentation over a standard reference text, few students purchase books for courses. Even the library - by definition a place to find and read books - is primarily used as a venue where students can comfortably use laptops.

...AND FACEBOOKS

Facebook has come to be the one most prevalent means of social networking on campus. Facebook newsfeed is the ultimate source of latest campus news - rumor, gossip or otherwise. We even included a link to our Facebook page in this article. In a print newspaper.

Polt and RG are best uses of Facebook for the public good on campus. Facebook has seen over every event of significance, good and bad - from exams to placements, birthdays to Valentine's Day, and valfis to convocation. The likes, shares and comments on DSLR photos and statuses are a sign of friendship, love and polt on campus. Pages like Illumin-IIT are testament to Facebook's infiltration on campus. With all departments and most batches having their groups on Facebook; with vital information for the next day's quiz or assignment, Facebook use is inevitable.

Earlier, Facebook activity wasn't as high as it is now on campus. Google groups were the norm then, for most interactions. However, with Facebook becoming so widely used on campus, most students would rather sit in their rooms and interact on Facebook rather than get out and develop real relationships.

WITH STUDENTS PREFERRING TO COMMUNICATE ONLINE, THE CUSTOM OF EVENING LUKKHA IN THE WING IS LONG GONE.

WHAT'S UP WITH WHATSAPP?

Whatsapp use has also seen an explosive rise in the recent past. Groups on Whatsapp effectively save time, cost and energy and deliver messages instantly. In theory, at least. In practice, it largely seems to be a way to keep in touch with your friends - even those who live only a few doors down. So much so that messaging on Whatsapp seems to have taken the place of actual conversation on phone. WiFi availability in pretty much every area of the institute, while a great convenience at most times, has only encouraged this. *attempts to connect to IITB-Wireless and fails*

CLUBBED TO DEATH

Don't get us wrong. We're not complaining - we'll take any excuse to procrastinate studying. But the sheer number of clubs in existence in the institute is overwhelming. While the number has never been particularly small, the last few years have seen an astronomical growth in clubs. Each club organizes a multitude of events in a semester, and it's a hard task to decide which ones to miss. And with back-to-back events activities organized by clubs pretty much every day of the week, we can't help but get caught in a - er - club sandwich.

#SaveDC

We propose a proactive effort to save DC++ on campus. Here are some ways we can all contribute:

- **Graduating students can donate old laptops for use as DC++ hubs to the hostel.**
- **Students with spare and/or nominally damaged laptops/PCs can volunteer for maintaining hubs.**
- **Computer Secretaries of each hostel should have access to information about maintaining a DC++ hub, passed on as part of groundwork for the post.**
- **Department General Secretaries / Computer Secretaries in hostels can be assigned to maintain a laptop/PC in the Computer Room of the department/ hostel for sustaining a DC++ hub from each department/hostel, along with related material, as part of their responsibilities.**
- **Share. As much as you can. It's common courtesy to share at least what you download. Because, sharing is caring.**

If you can help us in regards with this, then let us know, with #SaveDC - at insight@iitb.ac.in, or our Facebook page - www.facebook.com/insight.IIT Bombay.

EXAMINING ACADEMIC REFORMS : PART 2

ANISH GUPTA, AYUSH KANODIA, KSHITIJ JAYAKRISHNAN, KUSH MOTWANI, SAYESHA ARAVAPALLI, SHREYA SRIDHAR

The structure of academic programs has undergone extensive changes over the past few years. As the administration and student representatives strive for even better programs, we look at some such policies. While some opinions are conflicting or unfeasible to implement, some are novel and have seen the light of the day, providing students much more flexibility in their curriculum.

5 YEAR M.SC. MATHEMATICS

A 5 year M.Sc. Mathematics programme was offered through the JEE way back in the 1980s. Later on, this course was discarded because most students took up the course simply because it was the only available option, and not because they were genuinely motivated towards pursuing a career in mathematics. Despite the M.Sc. Mathematics degree not being offered as a course through the JEE, it still exists, however humbly, maintaining a low profile. But in the last few years, math enthusiasts have begun to take up this degree.

Students can make the transition to this pure science degree either at the end of their first, second year or third year. It is necessary for the student under consideration to have a good overall CPI as well as good grades in all math courses completed. For getting in after the third year, it is necessary for the student to have done additional courses in the Mathematics Department, and to have had good grades in those as well, over and above the aforementioned requirements.

Prof. Ravi Raghunathan of the Mathematics department, who is actively involved with the 5 year M.Sc. programme, is very supportive of more students keen on pursuing careers in maths taking up this course. "A decade ago, I was hesitant to encourage engineering students to switch to maths because there weren't so many opportunities outside of academia, and academic positions were also scarce. Now, however, the scenario for math graduates has changed, both in academia as well as outside. A large number of sectors employ math graduates in coding, statistical analysis, programming, finance and related fields, in which they are just as proficient as any engineering graduate. In addition, there are a large number of open math faculty positions in many institutions across the country."

Currently, students who have shown interest in mathematics have been offered this course. The number of students making this transition has not exceeded three students in a given year so far, possibly because they are unaware that this is an option, or simply because of the belief that coveted engineering degrees beat a mathematics degree in terms of employment opportunities. Importantly, however, he speculates that the department could probably accommodate up to 10 students a year without too much difficulty.

DUAL DEGREE PROGRAM

The Dual Degree programme has seen several widely varying revisions across the different departments in the institute. While some of the departments have scrapped direct admissions to the Dual Degree programme through the JEE entirely, others have retained it, while yet others have retained the specializations they deem fit, and scrapped the ones they don't. For example, in the Department of Mechanical Engineering, admission to two out of the three DD programmes has been scrapped through the JEE, because the department felt that they were not proving to be so useful as the research output was not appreciable.

However, the DD programme continues to exist across departments, and may be taken up by students in their second or third years subject to the department's recommendation. This shift is handled on a case-to-case basis, subject to requisite academic standing.

On asking Prof. Narayan Rangaraj, Dean AP the reasons behind the erratic amends to the DD programme, he said that this was but an interplay of several governing factors involving conflicting notions of academic policy. The syllabus and curriculum are discussed at the departmental level with inputs from alumni, industry and peer review, and are revised regularly. Some faculty members believe that the DD programme is beneficial as students are oriented towards learning a field of specialization of their choice early on in their academic careers. Others, however, argue that a student is not well-informed about the specifics of a field of interest right after JEE and hence, must be left to choose his/her specialization programmes once adequately informed, after his/her third year. The decision of implementing these programmes remains a constant debate within and between departments, and from time to time, different conclusions emerge as the most favourable, in keeping with the demands for research and academic opportunities.

Students too are divided in opinion in this regard. The DD programme is more rigorous and gives more in-depth knowledge in the respective field. Student grievances, however, are more directed towards the specialization not being of their choice; so, why go into depth at all? There are cases where students have suggested that they would be very happy to complete a Dual Degree programme had it been more liberal, and they could align their coursework to their interests. Dual Degree courses are few in number, and do not cover every major area of specialization. So, for example, while a Physics student may be interested in specializing in particle physics or thermal physics or even cosmology, the only choice he has available is a nanotechnology specialization.

Also, in a few departments, some specializations have little further opportunities in India, while companies abroad, in those fields, do not recruit from IITB.

I WOULD HAVE OPTED FOR A DUAL DEGREE PROGRAMME, IF...

23% I WAS GIVEN THE OPTION OF PICKING ANY SPECIALIZATION OF MY CHOICE

19% I COULD CHOOSE THE FIELD OF SPECIALISATION BUT I WOULD ONLY SHIFT AFTER THIRD YEAR

42% I MAY OR MAY NOT OPT FOR THE DD PROGRAM, BUT WE MUST BE ALLOWED TO PICK OUR SPECIALISATION

WHAT DO YOU THINK ABOUT THE NUMBER OF BASIC SCIENCE COURSES IN THE FIRST YEAR?

42%	17%	38%
IT'S FAIR	TOO DAMN HIGH!	NEED FLEXIBILITY

THE NEED FOR INCREASING THE CREDITS ALLOTTED TO BASIC SCIENCE COURSES WAS FELT BECAUSE OF THE VARIED EXPERTISE THEY PROVIDE AN INDIVIDUAL, TO DEVELOP AN APTITUDE FOR RESEARCH AND THINKING, ABOVE AND BEYOND THE CONFORMIST SCHOLASTIC TIERS.

BASIC SCIENCE COURSES FOR FRESHERS

Freshers at IITB are required to do a fixed number of mandatory basic science courses. This curriculum has seen quite a few changes in the past few years. The chemistry courses were offered as a single course till 2012, inclusive of physical, organic and inorganic chemistry. The recent curriculum changes saw the course being split into two separate courses - one on physical chemistry, and the other consisting of both organic and inorganic chemistry. A similar trend was followed in the physics courses. Earlier, a single course on either one of modern physics or electricity and magnetism was offered. Since 2013, the curriculum has been revised to include two courses for freshers of all departments - one on quantum physics and another on basics of electricity and magnetism. Also, the introductory course in economics has been postponed to later semesters, and an introductory biology course has filled its place. The math courses, however, have retained their form and content.

Prof. Rangaraj, Dean AP remarked that the need for increasing the credits allotted to basic science courses was felt because of the varied expertise they provide an individual to develop an aptitude for research and thinking, above and beyond the conformist scholastic tiers. He also noted that companies too appreciate this students' breadth of knowledge owing to a more holistic education.

In most top-ranked universities, students can select their courses to satisfy their basic science credit requirements from a bouquet of courses available. While Prof. Rangaraj says that there is a great deal we can do to enable students to achieve this flexibility, the cost of such a policy would be a compromise on academic uniformity and linear grading scales which the institute tries to establish as parameters to fairly evaluate students. The Dean AP is of the opinion that this limitation set by uniformity requirements is but a consequence of the larger prevailing mindset of establishing fairness over granting choice, in our country.

VARIATION IN ELECTIVES ACROSS DEPARTMENTS

The number of compulsory electives across different departments in IIT Bombay is non-uniform. The number of department electives, specialization electives and open electives, B.Tech. projects, and the semesters in which students take them up, are subject to one's department. This has often evoked questions about how evenly students across departments work, and thus, are graded.

For example, the number of department electives that an MEMS student has to do is just one. CSE and Civil have six, in contrast. And, while on the one hand, CSE students can take three out of their six department electives from other departments as well, on the other hand, students in MEMS face a rigid curriculum for their department electives.

On asking Prof. Rangaraj, Dean AP his thoughts on the matter, he said, "Every department has its autonomy in matters of deciding their course curricula. Different departments parameterize a student's subject knowledge differently, and hence require varying course requirements to satisfy those."

Shubham Goyal, General Secretary Academic Affairs (UG), provides another view: "I agree with Prof. Rangaraj. Departments need to be given autonomy. Student feedback pertaining to individual departments needs to be taken and sent to HoDs. Having talked to many HoDs, they more than welcome such student feedback."

"The institute simply approves certain programs, but the departments then choose what they want to offer ," says Prof. Rangaraj. "Students through the DUGC are part of such decisions. Every department has its own views. There is a whole window, and then departments can choose to be somewhere in this window," he adds.

DIFFERENT DEPARTMENTS PARAMETERIZE A STUDENT'S SUBJECT KNOWLEDGE DIFFERENTLY AND HENCE REQUIRE VARYING COURSE REQUIREMENTS TO SATISFY THOSE.

MATTER OF OPINION

In our Senior Survey of the Class of 2014, students, on an average rated academic flexibility at IIT Bombay at a meagre 7, on a scale of 10. Although, this is a lacklustre figure for one of the top engineering colleges in the country, IIT Bombay does hold promise for change- a promise to make student's opinions on policy decisions count.

Policy decisions involve debates at the level of the DUGC and the UGPC of which student representatives constitute a fair proportion. Department level feedback through student representatives and Department Councils are a channel to push for any change that a large proportion of students in the department deem fit.

Open Houses are yet another platform for discussion and to put forth opinions. Prof. Rangaraj encourages students to insist for Open Houses to be held.
"The decision to implement an academic reform largely lies with the faculty and students at IIT Bombay," he says.

Thus, students can press for change, to meet their ever-changing academic demands, for it is their right to exercise.

EDITORS' NOTE

We're proud to bring to you our second print issue of the semester, and really hope that you've had as much fun reading it as we did creating it. Our aim throughout the year has been to make Insight's content as relevant and easily accessible to our readers as possible.
Towards this aim, we have worked on novel projects this year such as the comprehensive Senior Survey and the Freshers' Survey, Datagiri - the institute's first-ever data blog, the inaugural PG Freshers' Newsletter and the Reddit AMA with the former DoSA, Prof. Yajnik, and are elated by the response we've received. We have also collaborated with the CSE and the Physics departments to bring out their respective Department Newsletters, which should reach you soon. With IIT-BBC, we continue to bring out comprehensive video coverage throughout the year.
None of this would have been possible without the amazing team we're so lucky to have. As always, this is YOUR newsletter, and we want YOU to contribute. If you wish to bring any news to our attention or want us to cover any issue, feel free to write to us at insight@iitb.ac.in or send a message on our Facebook page, and we'll get back to you immediately. If you're a photographer, designer, illustrator or a cartoonist and would like to contribute to Insight, do get in touch.
Wishing you happy end-sems and happier winter holidays!

Mihir and Niranjan