



TEAM ABERRANT

CASE STUDY SAFE CAMPUS REOPENING

A PLAN TO OPEN IIT KHARAGPUR
TEAM LEADER: ARNAB MAITI

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Task 1.State the rules and regulations about the safety and hygiene of the students, faculty, and staff in a complete offline academic session. Details should include all the academic and non-academic aspects of the campus.

Broad classification of academic and non-academic aspects

Academic Aspects:

1. Conduction of offline classes
2. Conduction of lab classes
3. Interacting with professors and doubt classes
4. Functioning of the central library

Health and COVID-19 related aspects:

5. Facilities for quarantine
6. Frequent and fast covid testing methods
7. Vaccination of the students, professors and staff.
8. Easy contact tracing methodologies
9. Arrangement of proper health facilities, including a doctor that can guide through
10. Health and hygiene in hostels

Hall and Maintenance Aspects:

11. Maintenance of messes
12. Sharing of hostel rooms
13. Drinking water facilities
14. Maintenance of hostel corridors
15. Sharing and sanitization of toiletries and bathrooms
16. Sanitization of commonly used surfaces
17. Laundry services
18. Waste management
19. Recreation rooms inside hostels
20. Businesses inside the hostels like cafes and general stores
21. Eateries outside the hostels
22. Functioning of the tech market

Sports and other Extracurricular activities:

23. Functioning of gymnasiums
24. Opening of places of recreation outside the hostels.

Social life Aspects:

25. Students meeting each other in places other than academic buildings
26. Celebrations of birthdays or other joyful occasions in hostels
27. Celebration of festivals
28. Society meetings and their functioning
29. Organization of the different college events and competitions
30. Commuting between the hostel and other institute buildings

Academic Aspects:

1. Conduction of offline classes
 - a. Based on the professor's willingness, he/she can take offline classes ensuring proper social distancing.
 - b. The timetable should be adjusted accordingly to avoid overcrowding while entering and leaving the academic complexes.
 - c. Wearing masks is mandatory for all. Attendance will be taken using a barcode.
 - d. Students will enter or leave the class in a staggered manner, in a disciplined way.

- e. Students of the academic complexes should go to the classes in a phased manner during the standard slots like 12 PM-1:30 PM, 4 PM-5:30 PM when we can expect a high crowding
 - i. For example 45-minute slot for the Nalanda complex, a 10-minute slot for the ground floor, 10-minutes for the first floor and so on
 - ii. 30-minute slot for Main building and attached departments
 - iii. 30-minutes slot for other departments and labs
2. Conduction of lab classes
 - a. Refer Question: 10
3. Interaction with professors and doubt classes
 - a. All the subject related doubts can be first sent via an electronic medium.
 - b. If a student is dissatisfied with an answer, he received via mail from the professor, or the professor feels that the doubt needs to be addressed in person, the student can meet the professor.
 - c. Professor can stay inside a cubicle while addressing one-to-one conversations.
4. Functioning of the central library
 - a. Students must carry a mask and sanitizer.
 - b. There will be a security person to monitor each hall.
 - c. In case one of the halls gets fifty per cent occupied, time constraints will be applied, and students who have been sitting for the longest will be asked to leave.
 - d. Also, students will be encouraged to access the online available resources and journals by logging into Library VPN.

Health and COVID-19 related aspects

5. Facilities for quarantine
 - a. Refer to Task:2 and Task:18
6. Frequent and fast covid testing methodologies
 - a. Refer to Task: 3
7. Vaccination of students, professors and staff.
 - a. A mass vaccination program will be simultaneously running parallel to other academic activities. This will be to make the campus covid 19 free.
8. Easy contact tracing methodologies
 - a. The institute can facilitate developing a new app similar to the **Arogya Setu** app or use the existing app.
 - b. It will be mandatory for every student to carry their smartphones everywhere with the app installed and working.
 - c. If a student becomes corona positive, his whole class won't be quarantined. Instead, a priority order will be set, and those at most risk will be quarantined.
9. Arrangement of proper health care facilities, including a doctor
 - a. At least one doctor will always be on duty on the campus
 - b. All the cases must receive his attention under 2 hrs of identification.
 - c. There will be some nurses to aid him.
 - d. The vaccines will be given under his supervision.
 - e. A good stock of vaccines, covid kits and rapid antigen tests.
 - f. The number of beds must be increased immediately.
10. Health and hygiene in hostels
 - a. Students shall not gather in hall corridors or each other's rooms in large numbers. At least till complete immunization

- b. They should not take support of railings until necessary.
- c. Sharing of individual property should be prevented
- d. They must sanitize hands frequently

Hall and Maintenance Aspects:

- 11. Maintenance of messes
 - a. The students can be given slots for taking the respective meals.
 - b. Either cubicle can be made, or the students will be allowed to take away food to their hostel rooms and then submit the plates, the latter being a preferred choice.
 - c. Students must maintain distance while being served the food. And should also be wearing masks when they come down to take food.
- 12. Sharing of hostel rooms
 - a. As the institute lacks proper accommodation facilities, students who have completed the quarantine period will share rooms.
 - b. It can be done so that these students also have a lot of classes in common. This is just a prevention step done to lower the chances of a significant outbreak. In case there is a spread.
- 13. Drinking water facilities
 - a. Students must sanitize their hands before and after they use the facilities already present.
 - b. They may sanitize the surface after use using the spray sanitizer.
- 14. Maintenance of hostel corridors.
 - a. Proper cleaning should be done at least once every two days.
 - b. At each session, all the dustbins must be emptied, and waste got rid of.
- 15. Sharing and sanitization of toiletries and bathrooms
 - a. Students must use sanitizer each time they visit the toilets.
 - b. Not more than three students will be allowed at a single time
- 16. Sanitization of commonly used surfaces
 - a. All the commonly used surfaces like doorknobs, water taps, etc. must be frequently sanitized to prevent any potential build-up. This can be done by students too using the sanitizer sprayer in their mandatory toolkit.
- 17. Laundry services
 - a. The students can be allotted specific time slots for using the washing machines. Proper care must be taken that no two students' clothes get mixed.
 - b. The machine buttons should be cleaned once with the spray sanitizer, before using.
 - c. Hands should be sanitized each time.
- 18. Waste management
 - a. students must use lid dustbins in their rooms. Hostels must provide for closed lid dustbins in each wing.
 - b. Special dustbins must be placed for throwing away used, worn out masks.
 - c. Students must take care that they do not litter here and there.
 - d. The wastes generated from the hospitals and testing centers must be appropriately treated before throwing away.
- 19. Recreation rooms inside hostels
 - a. Students will be allowed to use the recreation room, but they must not sit very close and always have their masks.
 - b. There will be a staff member to foresee that the above conditions are being followed.
- 20. Businesses inside the hostels like cafes and general stores
 - a. General stores have to be kept open with specific slots allotted to the students.

- b. Masks and social distancing norms will be in place
 - c. Cafes may remain closed, or if they operate, they will follow a takeaway system.
 - d. Stationery too will remain open
21. Eateries outside hostels
- a. They may remain open but must not allow crowding, and students will not be allowed to have their meals there. They will have to take it with them to a not so crowded place.
22. Functioning of the tech market
- a. The market can be kept open with common restrictions of masks and social distancing.
 - b. Students should not go to the tech market unnecessarily and try to meet their demands from the shops inside their hostels.

Sports and other Extracurricular activities:

23. Functioning of gymnasiums.
- a. Gyms can be used as usual provided, masks are worn, and hands are regularly sanitized.
 - b. Also, there will be a restriction to how many students can use the gym simultaneously.
24. Opening of places of recreation outside hostels
- a. They can be opened with restrictions on huge gatherings
 - b. Masks must always be on.

Social life Aspects:

25. Students meeting each other in places other than academic buildings
- a. Both must wear a mask
 - b. Stay at a distance
 - c. Avoid direct contact
26. Celebrations of birthdays or other joyful occasions in hostels
27. Celebration of festivals
- a. Birthdays and festivals need to be celebrated without any big social gathering in the recreational rooms of halls. There should be no contact, and all must be wearing masks. Students must not gather in the hostel rooms. The hostel authority must always be informed before a celebration.
28. Society meetings and their functioning
- a. Societies will be allowed to continue their normal functioning provided they adhere to the administration's rules and regulations.
 - b. Social distancing should be maintained.
 - c. Also, they must maintain distance from the meeting of another society in the gymkhana.
29. Organization of the different college events and competitions
- a. Because of the potential risk of a significant outbreak by a large gathering seen in college fests, they need to be cancelled.
 - b. The events may occur provided the distancing is maintained, and everyone wears masks.
 - c. Competitions can be efficiently conducted without any restrictions other than masks and frequent use of sanitiser.
30. Commuting inside the campus.

- a. The students must always wear a mask while commuting.
- b. They must have an individual cycle, and mutual sharing won't be allowed.
- c. The students can be given a small toolkit containing two washable masks, one hand sanitiser, one spray sanitiser. They will be required to do this at all times. And will have to see that they keep it in proper condition.
- d. Students must not use each other's cycle.

Task 2. As of now, there are many cheap and effective methods developed for testing. Using these techniques, we aim to identify students for quarantine before they enter the campus. How do you facilitate such arrangements? You are required to propose a model for pre-arrival testing of COVID students before they arrive on campus. Also, explain a simultaneous model for post-arrival testing before the students can go to the halls.

The testing procedure can be divided into various steps:

STEP:1

While reporting:

- 1. Students should take any RT-PCR/True NAT/CBNATT/Rapid Antigen tests within 72 hours of reporting time at the campus.
- 2. Reports for Antibody/Serological tests will not be considered due to chances of high false negatives.
- 3. Students should upload a soft copy of their test report showing "NEGATIVE" and a fitness certificate issued by a Registered Medical Practitioner through ERP.
- 4. The student is supposed to mention his/her arrival date and time on ERP. On successful submission of all the details, the students can download the approval form.
- 5. There should be a dynamic portal on ERP, which shows the number of students arriving on campus on a particular date. This can help
 - a. Students to schedule their travel based on the number of students arriving on a particular day
 - b. Administration to manage the testing and monitoring of the facilities based on the crowd.
- 6. The details of the students should be maintained accurately.

STEP:2

After Arrival on campus:

- 1. After arrival on campus, on completion of all initial formalities, the students will be directed for a medical checkup and screening procedure conducted by the medical staff of BC Roy hospital or the multiple Rapid Testing Centers at the halls/Gymkhana, etc.,
- 2. A screening slip will be issued.
 - a. Non-symptomatic students:
 - i. Can proceed towards standard quarantine inside the hall of residence. Please refer to **Annexure A** for more details regarding quarantine.
 - ii. After 14 days of the quarantine period, they should undergo rapid testing, after which they will be issued a "fitness card" if tested negative.
 - b. Symptomatic students or those having some medical problem:
 - i. They will be sent to the duty doctor of the hospital, who will inspect them. If the symptoms are COVID-19-like, the student will be shifted to

- special quarantine and tested immediately for COVID using the RT-PCR technique.
 - ii. Sample collection and testing may take 2-3 days. During this entire period, the student will remain in quarantine at the quarantine center. The mobile number of the lab technician who will collect the sample will be shared with the student.
 - iii. Students should observe a 14 day mandatory quarantine period before they can be shifted to their respective halls on campus.
3. Suppose the non-symptomatic student develops any symptoms related to COVID-19, like symptoms during the quarantine period or tested positive during the second rapid test. In that case, he/she will have to report to the Hall staff immediately. Following that, they should stay at the BC Roy hospital.

STEP:3

Extensive testing procedure

- 1. There are already two COVID-19 testing centres present around IIT Kharagpur, which have 30 per day testing capabilities. The number of test centres and the testing capabilities have to be scaled up.
- 2. We have estimated that approximately 1000 students will need to be tested every week due to the development of symptoms and otherwise.
- 3. It will be challenging to conduct so many tests in Kharagpur itself, considering the Kharagpur test centres will have to be used by locals.
- 4. We plan on collaborating BC Roy with the testing centres in Midnapore for testing.

Testing labs in Midnapore

- Midnapore medical college
Address: Vidyasagar Rd, Midnapore, West Bengal 721101
 - Ayush Corona Hospital, Paschim Medinipur
 - Global Corona Hospital, Paschim Medinipur
 - Salboni SSH
5. Staff from the hospitals mentioned above will come and collect samples from the IIT Kharagpur campus. Medinipur is a 40 min journey from IIT Kharagpur via NH-14.
6. The samples will be tested in the testing labs, and reports will be sent online to the institute, which will then act according to it.

Task 3. Due to the budget constraint, testing everyone in our vast community (like Cornell) is not feasible daily. How do you plan to execute random testing for students, faculty, staff, and other campus communities during Autumn'21? What percentage of the population would you like to test every week? Give mathematical evidence.

Rapid Testing Centers:

Apart from the Rapid Testing Centers at BC Roy, additional Rapid Testing Centers can be set up at

No. of Halls of Residence at IIT Kharagpur = 21

Proposed number of testing centers:

1. At every hall of Residence:
 - a. For students
 - i. For halls having less than 200 boarders: 1 testing centre
 - ii. For halls having 200-400 boarders: 2 testing centers

- iii. Additional test center, for every 200 boarders
- b. For staff:(The staff below the age of 45 or the staff members who haven't taken the vaccine should be tested regularly.)
 - i. Based on the no. of staff members at every hall, there should be 1 or 2 testing centers, especially for staff.
- 2. Other testing centers can be set up at
 - a. For students:
 - i. Technology Students' Gymkhana
 - ii. Tata Sports Complex, Gyan Ghosh Stadium and other sports arenas
 - b. For staff
 - i. Tagore Open Air Theatre
 - ii. Mahatma Gandhi Ground

Mathematical Evidence:

Total Mess+Maintenance staff: 600+400

Rapid Testing can be done through almost 100% of the staff through 21 Rapid Testing Centers meant for staff at every hall of Residence.

The weekly expense for testing staff: Rs. 17,500

Students:

At each hall, 25% of the students can undergo Rapid Testing daily.

Estimating the arrival of all the students on campus,

Regular watch

1. Thermal screening personnel should be administered at the hall entrance, checking the student's body temperature while entering and exiting the hall.
2. Students should be regularly sanitised, and sanitisers should be provided in the halls and on every floor.
3. The administration should strictly say no to public gatherings.
4. Students without masks should be penalised on the spot by security personnel. A high penalty should be imposed for smooth implementation.
5. Students should not be allowed outside the halls of residence for the first 15 days on arrival.
6. After 15 days of arrival, students should undergo a second rapid test and seek a hall's fitness card.
7. By showing this fitness card, the students can step out of the Hall of Residence.

Check on the staff

1. All the hall staff should undergo thermal screening every day.
2. They should undergo Rapid-testing once a week at the hall testing centre, given and they should submit the report at the hall reception.
3. Every employee's medical file should be well-maintained, which consists of regular health reports of the employee.
4. The warden, assistant warden and the hall manager should be made responsible for checking the employees' medical files regularly.
5. All the staff members, who are above 45 years of age, should be vaccinated before the students enter campus.
6. All the professors, teaching staff and non-teaching staff on the campus should be vaccinated well ahead of students' entry.

Active Tracking

1. There should be proper quarantine facilities on the campus.
2. Proper maintenance of records of the students who tested positive.

3. There should be a separate dynamic portal on ERP/institute website where we can find details like
 - a. No. of students on campus(overall and hall-wise)
 - b. No. of active cases on campus(overall and hall-wise)
 - c. No. of students at each quarantine center
 - d. Occupancy percentage of each quarantine center
4. Based on the percentage of cases on campus, the administration should impose rules.

Rules and Regulations

- **Wearing a mask and regular sanitisation is compulsory at all levels**
- **Classes will be held online for the entire semester, and they are supposed to attend the classes from their rooms itself**

1. No risk condition

- a. Students can be allowed to move outside the hall after 15 days of quarantine period by showing their fitness card during this condition.
- b. Eateries, Tech Market and other facilities can be opened.
- c. Public Gatherings can be allowed up to a maximum of 10 students.

2. Low-risk condition

- a. Students of specific halls of residence where the percentage of cases is more than usual should not be allowed outside the halls of residence.
- b. Students and Staff of that hall should be tested regularly.

3. Moderate risk condition

- a. Strict on Social distancing and sanitisation in every Hall of Residence
- b. Restriction on the staff staying outside the campus.
- c. Restricting people to move inside and outside the campus.
- d. They are not allowing new students to enter the campus.
- e. Increasing the quarantine facilities and regularly monitoring the health of patients who tested positive for the virus.

4. High-risk condition: SHUT DOWN

Task 4. What kind of innovation do you plan to bring in to minimise the risk of spreading the virus during possible super spreader events like short lunch hours, crowds in buses, rush in bicycle paths, and main roads? Suggestions may include stretched timetables, longer lunch hours, etc. Also, what will be the new sitting guidelines in classrooms?

Examples of the distribution of students are shown. Other halls will follow this way.

For LBS Hall (capacity of hall 2000, QC-350)

QC-Quarantine Capacity (might change)

Protocol for students after Quarantine Period

- 1600 students (when the last group enters) will be divided into 8 groups
- 200 students will go to 5 different counters for collecting food
- **Lunch time**
 - Group 1: 12:00 PM to 12:15 PM
 - Group 2: 12:15 PM to 12:30 PM
 - Group 3: 12:30 PM to 12:45 PM
 - Group 4: 12:45 PM to 1:00 PM
 - Group 5: 1:00 PM to 1:15 PM
 - Group 6: 1:15 PM to 1:30 PM

Group 7: 1:30 PM to 1:45 PM
Group 8: 1:45 PM to 2:00 PM

- **Dinner time**

Group 1: 7:30 PM to 7:45 PM
Group 2: 7:45 PM to 8:00 PM
Group 3: 8:00 PM to 8:15 PM
Group 4: 8:15 PM to 8:30 PM
Group 5: 8:30 PM to 8:45 PM
Group 6: 8:45 PM to 9:00 PM
Group 7: 9:00 PM to 9:15 PM
Group 8: 9:15 PM to 9:30 PM

- **Requirements:** 1 additional worker(other than the general staff) at each counter for serving food during both dinner and lunch. 5 extra workers in total for the above-mentioned hall. The total number of workers at each counter(2 or 3) will depend on the amount of staff present.

- **Guidelines to be followed:**

1. According to the group and counter, allotted students will queue up. 40 students in one counter.
2. Students are requested to strictly adhere to the timings and maintain a proper queue.
3. Students are requested to take their food and get back to their room and have it there.
4. In each wing, there will be a tub where students will deposit their plates which will be taken to their washing place by the mess workers at 2:30 pm.

For Nehru, Patel, MS Hall (hall capacity 400-440, QC-100-120)

Protocol for students after Quarantine Period

- 300 students (when the last group enters) will be divided into 4 groups
- 75 students will go to 3 different counters for collecting food

- **Lunch time**

Group1: 12:00 PM to 12:30 PM
Group2: 12:30 PM to 1:00 PM
Group3: 1:00 PM to 1:30 PM
Group4: 1:30 PM to 2:00 PM

- **Dinner time**

Group1: 7:30 PM to 8:00 PM
Group2: 8:00 PM to 8:30 PM
Group3: 8:30 PM to 9:00 PM
Group4: 9:00 PM to 9:30 PM

- **Requirements:** 1 additional worker (other than the general staff) at each counter for serving food during both dinner and lunch. 5 workers in total for the above-mentioned hall. The total number of workers at each counter(2 or 3) will depend on the amount of staff present.

- **Guidelines to be followed:**

- According to the group and counter, allotted students will queue up. 25 students in one counter.
- Students are requested to strictly adhere to the timings and maintain a proper queue.

- Students are requested to take their food and get back to their room and have it there.
- There will be a tub in each wing where students can deposit their plates taken to their washing place by the mess workers at 2:30 pm (after lunch) and 10:00 (after dinner).

For RP, RK, Azad Hall (hall capacity 600-700, QC-200-225)

Protocol for students after Quarantine Period

- 400 students (when the last group enters) will be divided into four groups
- 100 students will go to 4 different counters for collecting food
- **Lunch time**
Group1: 12:00 PM to 12:30 PM
Group2: 12:30 PM to 1:00 PM
Group3: 1:00 PM to 1:30 PM
Group4: 1:30 PM to 2:00 PM
- **Dinner time**
Group1: 7:30 PM to 8:00 PM
Group2: 8:00 PM to 8:30 PM
Group3: 8:30 PM to 9:00 PM
Group4: 9:00 PM to 9:30 PM
- **Requirements:** 1 additional worker (other than the general staff) at each counter for serving food during both dinner and lunch. Five workers in total for the above-mentioned hall. The total number of workers at each counter(2 or 3) will depend on the amount of staff present.
- **Guidelines to be followed:**
 - According to the group and counter, allotted students will queue up. 25 students in one counter.
 - Students are requested to strictly adhere to the timings and maintain a proper queue.
 - Students are requested to take their food and get back to their room and have it there.
 - There will be a tub in each wing where students will deposit their plates taken to their washing place by the mess workers at 2:30 pm (after lunch) and 10:00 (after dinner).

PS: On the rainy days to distribute food, the mess, the Hall room where Rangoli is done, and a broad corridor can be used for setting counters. Otherwise, the counter will be in the open areas of the hall.

Manage crowd at Nalanda

- There can be four entry points to Nalanda for students. One is the lane after Rajiv Gandhi school of Law dept., the next is beside the agriculture dept. , the other two are the lane beside the SMST department and one entry between Agriculture and Food Engineering department and SMST department.
- Further, these groups can be divided as follows.
 - Group1 (entering through RG lane)- Enter Nalanda building through gate 3 and 4
A bus will follow the Group 1 route as it's the longest.
 - Group 2(through AG dept.)-gate 1 and 2
 - Group 3(between AG and SMST)- gate 9
 - Group 4(SMST dept.)- gate 5, 6,7,8.

(This huge group will use the main gate, follow the route through the academic area and get out through the Nehru museum gate and reach Nalanda. Others will go through the crossing beside tikka.)

- Students will use the stairs which are just near to their entry gate.
- Security guards will be there to regulate the traffic at the junctions of the street as well as near the stairs inside Nalanda.
- Students are suggested to first reach the floor and then disperse towards their classroom.
- Common subjects can be arranged in Nalanda on every alternate day, whereas department subjects can be taken in dept. classrooms which are big and student strength is less.
- While returning from class to the hostel, a student is requested to trace back the path which he has traversed while reaching the class.

Task 5. How do you plan to implement the sanitation process at different places like halls, academic areas, and community areas? Describe the plan including how to enforce them in detail. Suggestions may include increased frequency of cleaning washrooms by maintenance staff, wiping of desks, tables, and chairs at regular intervals by maintenance staff or by students themselves while leaving the classrooms etc.

SANITATION PROCESS :

• Sanitation inside halls including mess:

1. Provide enough refuse bins lined with plastic bags and tight covers in the halls and canteen areas. The bins must be covered at all times.
2. Clean mirrors, door-knobs and any other surfaces where there is contact with users once in two days.
3. The toilets should be cleaned once every three days.
4. Students should eat the food in their rooms and dispose of the plates in the tubs allotted outside their room. A student volunteer shall be selected per floor to look into the matter.
5. The students should clean their rooms every day. The rooms will be moped once a week by the workers.
6. The corridors should be kept clean and moped once a day by the cleaning staff.

• Sanitation inside community area:

1. No eatables should be allowed inside the community areas. All the packets should be disposed of in proper dustbins kept outside each room.
2. Any public equipment used should be cleaned thoroughly with a 70% alcohol wipe before leaving by the students.
3. There should be a sanitation tunnel made so that students can be sanitized while coming out.
4. All areas within the premises shall be disinfected using clinically approved disinfectants. The areas to be disinfected include but are not limited to –
 - i. Entrances to the premise, building, rooms
 - ii. All open areas used by staff and visitors i
 - iii. Washrooms and toilets

- iv. Shoe baths (Members will be encouraged to carry separate workout shoes)
 - v. All other frequently touched surfaces (doorknobs, handles etc.)
- vi. Equipment in gymnasiums

- **Classrooms and other Learning Sites:**

1. Proper sanitization at all learning sites should be ensured by the cleaning staff.
2. Cleaning and regular disinfection (using 1% sodium hypochlorite) of frequently touched surfaces (doorknobs, elevator buttons, handrails, chairs, benches, washroom fixtures, etc.) to be made mandatory in all classrooms, laboratories, (and also) lockers, parking areas, other common areas etc. before the beginning of classes and at the end of the day.
3. Teaching materials, computers, laptops, printers, shall be regularly disinfected with a 70% alcohol swipe.
4. Hand washing stations with facilities of liquid soap should be created so that every student can wash her/ his hands frequently.
5. Regular and sufficient supply of face covers/ masks, gloves, disinfecting material, sanitizer, soaps etc. to sanitation workers should be ensured.
6. Foot-operated sanitiser stands should be installed at exit/entry point and it is refilled by cleaning staff whenever empty.
7. Washrooms should be cleaned once a day with Domex toilet cleaner and twice a week with Sodium hypochlorite solution.
8. Common areas and corridors should be swept and moped daily.
 - 1) 1:00 pm - during break classrooms should get empty and everyone should have their desks cleaned.
Workers wipe the doorknobs and desks.
 - 2) 6:00 pm - after class ends workers should clean the chairs, desks.

Task 6. To minimize the interactions, is there any need for the modification of existing rules to enter academic complexes, hall premises, roam around wings, use hall facilities, commute on campus roads, etc. Suggestions may include formulations of a new code of conduct or modification of existing guidelines. (For example - putting on a mask all the time except while in a mess, social distancing etc.)

Common guidelines for every premise:

1. Adequate arrangements of thermal scanners, sanitizers, face masks should be made available at all entry and exit points.
2. Those having symptoms of fever, cough or difficulty in breathing should not be allowed to enter the premises. Spitting on the campus and not wearing masks must be made a punishable offence and a small fine can be charged (Refer to task 11 for more details on fine).

1) Academic Premises:

- a) Crowding must be avoided at entry/ exit points. Staggered timings of entry and exit with limited strength for different programmes should be followed. For example for first years :
 - i) Sec 1 to 5 can enter the classroom at 8:00 AM.

- ii) Sec 6 to 10 can enter the classroom at 8:20 AM.
- iii) Sec 11 to 15 can enter the classroom at 8:40 AM.
- iv) Sec 16-20 can enter the classroom at 9:00 AM.
- b) For ensuring queue management, inside and outside the academic premises, specific markings on the floor with a gap of 6 feet may be made and should be enforced by the security staff.

2) Hall Premises

- a) Students of other halls are only allowed in the common rooms of the halls and not allowed to visit the rooms of the students.
- b) There should not be any birthday celebration allowed inside the hostel which includes more than three people in one place together.
- c) There should be a proper queue maintained while taking the food in the mess during the allotted slots with a minimum distance of 6 feet between the students.
- d) There should be staggered timings for different sports being played in the ground, gymnasium and general stores inside the hall areas in order to avoid the crowd.

3) Community Area

- a) At any point of time, there should not be allowed more than 5 people together standing at one place in the community areas.
- b) The student volunteers should look after a particular area assigned to them in the gymkhana.
- c) There should be a fixed time set for every society to use the gymkhana or classrooms as and whenever required. Prior intimation should be given to the student volunteers before using the gymkhana.
- d) The community areas should have a student volunteer to check if the students have moved out of the gymkhana after the allotted time.
- e) Wearing a face covering is compulsory whenever someone enters any campus building unless the person is doing some heavy workout at the gym or any kind of strenuous activity. In such scenarios, social distancing must be ensured.

4) Canteens:

- a) Plexiglass shields have been installed at all cashier and door-checker stations.
- b) All food in the eateries will be served by staff, with no self-serve offerings, to reduce touchpoints and cross-contact.
- c) All the eateries should be going cashless for safety and sanitation.

Task 7. There are various courses across disciplines (like EVS, BS, Breadth subjects etc.) that don't require offline presence. Dropping off such courses or continuing with the online classes, what option would you choose? Based on that, give a revised curriculum that the students would follow across disciplines for the upcoming semester to reduce the number of student-to-student interactions in academic complexes.

We should outline criteria according to which we can decide which courses can be taken in online mode and which courses cannot be.

Even on campus, we must use a blended or hybrid model of classes - where some classes that have to be offline, will be, and others shall be online. According to the UGC guidelines, more than 50% of students should not be present inside any building/classroom.

1. Only those postgraduate students that have to do hands-on research work that cannot be effectively simulated in software like MATLAB, CAD-CAM, ANSYS, etc, may attend the laboratories in small groups.
2. Postgraduate students who are working on thesis writing or will be able to use the above-mentioned software may work from their hostel rooms.
3. Laboratory subjects will be conducted in offline mode but with reduced capacity.
4. Courses need to be segregated based on whether they need a blackboard to teach or can be taught via presentation.
5. Courses will be categorised on the basis of their student strength. Higher-strength courses will be moved online or will be modulated in different shifts to reduce gathering. Lower strength courses might be shifted online or conducted offline based on other listed criteria.
6. EAA requires physical activities to be done. This will lead to students gathering in different parts of the campus. There will be no credits associated with the EAA course. The course length will be reduced from 2 years to 1 year to reduce the gathering of both 1st year and 2nd-year students.
7. Some students may opt to study online from their hostels. They will be encouraged to do so. Each subject will follow a blended model of teaching combining offline and online modes. Recorded lectures will be provided to the students who wish to study from their hall rooms. An LMS (Learning Management System) will be implemented to facilitate online learning. The lectures and assignments will be uploaded to the LMS and submissions will be done through that instead of offline.
8. Higher credit courses or courses that have corresponding laboratory courses associated will have to be conducted offline.
9. Classes that require one-to-one interaction between the teacher and the student, for example, tutorials will need to be conducted offline. More tutorial teachers will be assigned per subject so that the students in each tutorial class does not exceed 20.
10. The examinations of all subjects will be held in offline mode. The examinations will be held in multiple shifts to prevent crowding. The student distributions in the shifts will be random and the scores will be normalised.

Task 8.The senior faculty can be considered more vulnerable to the effects of the virus as compared to others. How do you ensure their safety? Will you shift their classes online or is it possible to provide them with a more protective environment inside the class?

1. The professor should be vaccinated way before the arrival of students on the campus
2. Classes should be held in online mode at least until all the students have been properly tested and quarantined for at least two weeks. Exams should be in offline mode as professors are not needed and enough space is available to conduct them.
3. The shops should have a specific time slot only for the senior faculty and no students should be allowed within this time.
4. Masks should be made compulsory for everyone.

5. Students should not be allowed to go near the living quarters of the faculty.
6. Random testing of faculty and their family should take place.
7. Hostel wardens should be accessible only through emails and not physically.

Task 9. A number of PG and RS students visit the campus as day scholars. They are prone to higher contact and transmission as they are in daily contact with the external community of Kharagpur. How would you incorporate day scholars in your solution?

1. Classes should be held in online mode.
2. Their lab classes should be held at a timing different from the timings of the students on campus.
 - a. For example, a lab has a maximum capacity of 40 and is used by say 60 on-campus students and 20-day scholars-
 - i. Only 20 people should be allowed in a lab at a time.
 - ii. The lab should be officially open from 07:00-22:00 hrs giving 14 hrs per day.
 - iii. Day scholars should be provided with a session of 2.5hrs and remaining for the on-campus students.
 - iv. 30 min time should be provided between batches for going out and coming in.
 - v. Going by these calculations every student should get approximately 21 hrs a week.
 - vi. On-campus students should also be given the option of coming at non-official times.
 3. They should not be allowed to go near the hostels and residential areas of those who reside on campus.
 4. On-campus students should limit their contact with the day scholars and not be allowed to be in their contact to limit exposure.
 5. Labs classes for day scholars should be held in batches and not more than half the maximum lab capacity should be filled and labs should be open 24/7 so that all the batches can be accommodated.
 6. Labs should be sanitized after each batch.
 7. UV air purifiers should be kept in the labs and costs incurred can be distributed among the students.(Costs-32000 Approx students-11000 If everyone contributes even 1000 around 340 purifiers can be bought.)
 8. Masks should be compulsory.

Task 10. The space in labs is limited and hence, social distancing is difficult to follow. Design an efficient way of lab scheduling and space utilization for research for PG and RS students to minimize transmission in lab facilities. Clearly mention the modalities along with the person responsible for the same. Suggest any other change you would like to make to uplift the existing procedure. Suggestions may include a change in policy for biometric attendance, CRF, CIC labs, etc. (It is advised to consult Research Scholars to know their trouble and propose a solution for the same)

Scheduling for laboratory courses

1. Labs for courses should be held in batches the size of which should be equal to half the capacity of the lab.

2. Lab work should be taught in online mode or through YouTube beforehand.
3. Labs for courses should be open from 8 AM to 9 PM to accommodate multiple batches of the same course.
4. Biometric attendance should be scrapped as it increases chances of contact and should be replaced by scanning the barcode on the student's ID card which can be done without any contact.
5. 30 min time should be provided between batches for going out and coming in.
6. Alternate tables should be left empty during a lab session.
7. The next incoming batch should use the tables which were not used in the previous lab session. This will minimize the chances of the spread of the virus through touch.
8. Teaching Assistants and Lab assistants should change after each lab session in order to minimize the threat posed to them by the virus.

Safety guidelines of laboratory courses

1. Labs should be sanitized after each batch.
2. Masks should be compulsory for everyone.
3. Gloves should be compulsory for the lab assistants and the teaching assistants.
4. Thermal scanning should be done for every student before they enter the lab.
5. An asymptomatic student shouldn't be allowed to enter the lab and should be immediately referred to BC Roy and the student's faculty advisor should be informed about the same.
6. Sanitizer should be installed at the main door of all labs and should be made compulsory to use while going in and out of the lab, although students should be encouraged to bring their own personal sanitizers.
7. Entering and leaving labs should be done in an orderly fashion ensuring proper social distancing.
8. There should be only one lab assistant and a maximum of two TAs in one lab. The lab assistant should be in an enclosed cabin and be accessible only through the TAs for important matters. The TAs should be seated away from the students doing the experiments and students should not come within 6 feet of them.
9. Lab equipment should be sanitized using the alcohol wipe before the next batch enters the lab.
10. Shoe sanitizing mats should be installed at the entry and exit points.
11. The submission of assignments and experiment workbook can be done on moodle wherever possible. Even the professors can guide through online class while the students are performing the experiments under the supervision of TAs.

Scheduling for Research labs

1. If a research lab is visited by both day scholars and residents, then refer to task 9 for the scheduling of this special scenario. Otherwise, look at the following guidelines.
2. Research labs are usually quite congested with a maximum space of 0.5 meters between 2 tables. Hence, only 33% occupancy is allowed to maintain social distancing
3. The lab should be officially open from 6 AM to 11:30 PM every day.
4. 6-8 AM and 9 PM-11:30 PM Slots will be reserved for only urgent use only.
5. 30 min time should be provided between batches for going out and coming in.
6. Going by these calculations every student should get at least 24 hrs a week.

7. Batches and timings can be booked by students beforehand through an online booking system.

Safety guidelines of such labs

1. Labs should be sanitized after each batch.
2. Masks should be compulsory for the research scholar.
3. Gloves should be compulsory for those who touch the lab equipment and should be sanitized by the research scholars using the alcohol swipe after its usage.
4. UV air purifiers should be kept in the labs.
5. Sanitizer should be installed at the main door of all labs and should be made compulsory to use while going in and out of the lab, although students should be encouraged to bring their own personal sanitizers.
6. No one is allowed to eat inside the labs
7. If a swipe card is used to unlock the lab door, sanitize it using the alcohol wipe.
8. A research scholar is responsible for the sanitization of his/her table in the lab.
9. Shoe sanitizing mats should be installed at the entry and exit points.
10. Security in front of the Lab complex has to ensure that timings are properly followed by the research scholars and no research scholar enters the lab complex without a thermal scan.
11. The lab supervisor should be immediately informed if the research scholar is found to be symptomatic and appropriate decisions should be taken by the lab supervisor.

Task 11. Describe the set of rules which will be useful to handle the violations of the afore proposed (anywhere in answers to questions from 1 to 10) guidelines. Clearly mention all the punishments, Disciplinary actions, etc.

Reporting of an Offence

This section contains the measures we can take to ensure that offences are actually reported.

1) Student commits the offence.

- a) Fellow students can report, to provide incentive, as aforementioned, an inter-hall competition can be held, on the adherence to COVID safety guidelines. Reporting someone with a photograph will give the reporting student's hall some points, whereas the reported student's hall's points will be deducted, along with a monetary penalty or any other punishment, to the reported student. (The monetary fine has to be given to the committee managing the tallies of the halls, by the reported student, this committee will comprise of student members of each hall).
- b) If an institute worker reports, points will be deducted from the reported student's hall. And the money collected as a monetary fine will be given to the worker in case of a monetary penalty. In case, the punishment for the individual is not monetary in nature, the worker will get a point increment in a point tally maintained by the aforementioned committee, at the time of conclusion of the competition, the top few workers on the list will be given monetary rewards.

2) Worker commits the offence

- a) If a student reports a worker, the student's hall gets points on the tally maintained and the worker loses a point in his table, and points are added to a 'strike' table maintained on the worker, if the number of strikes exceeds a threshold, the worker will face consequences.

b) If a fellow worker reports the worker, the reported worker will lose earned points on the table and the reporting worker will gain the same. And similar to the above situation, points will be added to the striking table of the reported worker.

3) Tally tables to be maintained:

- a) Points of each hall: Points gained by reporting another hall's student or a worker. And points lost if a student gets reported.
- b) Points of each worker: Points added on reporting a student, when the punishment for the student is non-monetary, or by reporting another worker. Points lost by getting reported.
- c) Strike table of each worker: Points added when the worker is reported, points can't be removed.
- d) A list of some serious offences will be maintained for the students. Those who commit the offence once; will get their name on the list of that offence, and thus repetition can be tracked and appropriate action can be taken. The offences in question and the respective action to be taken on a given number of repetitions is specified in "Penalties and Offences".

The above tables will be maintained by a committee and one has to report the offences to the committee, to gain/lose points. The fine collection and storage will be managed by this committee. To report someone, one should have sufficient proof, only then the complaint is considered.

Penalties and Offences

Personal penalties other than the point tables, (the exact number of points will be decided by the committee, according to the weightage assigned to various criteria)

Please note, the below penalties will be applied along with the aforementioned table-point penalties and benefits. In certain cases, the cross rewards or point punishments have been exempted and the reasoning and the replacement mechanism in place have been explained.

1) Not wearing a mask in public places:

- a) Students will be fined 100Rs.
- b) Workers will have 2% deducted from their monthly salary.

2) Breaking quarantine or entering restricted areas:

- a) Student will be fined 500Rs, if the student refuses to, even though he is economically sound, or repeats this, or refuses to follow quarantine protocols, he will be forced to leave campus.
- b) 5% deducted from monthly salary.

3) Evading medical tests:

- a) Student will be fined 500Rs, if the student refuses to pay, even though his family is economically sound, or repeats this (i.e. still refuses), he will be forced to leave campus.
- b) 10% deduction from salary, if repeated, direct termination.

4) Not disposing of medical waste properly:

NOTE: The medical waste has to be disposed of safely, and protocols for the same are put in place, to minimize the risk to personnel and common folk in the locality. "Not disposing medical waste properly.", implies that the protocols and guidelines haven't been followed.

If a worker is confirmed, to be not following the same, direct termination will follow.

5) Gathering:

- a) If students gather in groups of 4-10 people, fine of 100Rs per person will follow. 10-20 people gathered will lead to a 200Rs fine per head. More than 20, will incur 500Rs per head, and on refusing to dissolve the gathering, or repeating the same,

the students will be forced to leave the campus. Please note; gathering implies that the people are interacting with each other in the setting and/or are closer than the standard social distancing norms.

6) Breaking social distancing rules (in the mess, an academic setting, or a similar setting where gathering takes place, but social distancing norms are in place to ensure safety):

The student will be subject to a fine of 100Rs.

7) Hindering any personnel in discharging their duty:

NOTE: The above will be reported by the personnel. If for example, a sanitation worker is supposed to clean a particular area at a particular time; and a student/ group of students refuses to let him/her do the same, the student/students will be considered to have committed the aforementioned offence.

NOTE: In this case, the worker will not get the money collected as punishment from the student to avoid false reporting.

The student/students will incur a penalty of 100Rs per head.

8) Workers not discharging their duties properly:

NOTE: Students will report this situation. The worker will be penalized 5% of his monthly salary. Additionally, no points will be given to students' hall for reporting, to avoid fake and unnecessary reporting. To give the incentive to report, the work being done will be made a criterion for the competition (like cleanliness, etc.).

Workers will be penalized 5% of their salary.

9) Entering or leaving restricted areas(, when they are maintained inside the halls):

If a student enters a restricted area, he will be penalized according to the hall rules.

Task 12. Identify people who are critical for university operations, like the mess and maintenance staff, and sketch a plan on how to protect them. How would you accommodate government protocols in your plan if the maintenance staff are vaccinated under the union govt's direction to vaccinate sanitary staff? Study the timelines and describe both scenarios.

Plans to protect the people who are critical for university operations

1. Important people who will be in the main contact with students for university operations include mess workers, cleaning staff, guards, teaching, and non-teaching staff.
2. To ensure students' safety we must ensure the safety of these people, and for that, they must be provided with high-quality safety gears, masks and sanitizers.
3. If these people are vaccinated then also social distancing and government protocols should be followed as they can act as carriers for the virus and as a result, other students can get potentially affected by covid-19.
4. Routinely thermal scanning and symptoms check should be done at various entry points, and symptomatic people should be isolated immediately for the prevention of virus spreading.
5. Staggered timings of entry and exit with limited strength for various staff should be followed for minimal interaction with each other.
6. Sanitization of the workplace (refer to task 5) should be done at a regular interval in order to protect the working staff.
7. A workplace will be shut down temporarily if more than 15% of the staff is infected by coronavirus.

Plans to vaccinate the people who are critical for university operations

8. Vaccination should be done in different batches so that we may not have a shortage of staff.
9. The batch size will be made small, about 30-40 people.
10. In one batch there will be all kinds of staff (including mess staff, lab workers, teaching staff and non-teaching staff) so that one type of particular staff should not be missing for university operations.
11. Vaccination should be given to different batches in a gap of one day so that they can have ample time to take a rest.
12. There are cases in which mild fever and body pain witnessed after vaccination, so utmost care should be taken 'post-vaccination'.
13. It has been reported that many people missed their second dose of vaccine all across the country (reference-
<https://zeenews.india.com/india/lakhs-of-people-missed-second-covid-19-vaccine-do-se-health-ministry-advises-caution-2345314.html>). Therefore it should be ensured by the administration that the staff do receive their second dose.
14. A database of vaccinated staff should be maintained by ERP.

Task 13. Shopkeepers of Tech Market form a large population who are again at high risk of external contact and susceptible to exposure. TechM was operating under restrictions during the Junta Curfew and post Junta Curfew. Provide a model for the functioning of the Tech Market. Mention the steps you would take to make the execution better.

1. Foot-operated or no contact sanitizer dispenser should be fixed at multiple points in the Tech Market including entry and exit point. Students are advised to use them frequently during their visit to tech M.
2. In most cases, coronavirus enters the body via mouth, nose, and eyes. So, a mask is compulsory for everyone inside tech M. A face shield is highly appreciated.
3. Coronavirus can stick to various surfaces and can stay alive for up to 12 hrs depending on the nature of the surface. Hence, Students are advised to avoid contact with any items in tech M unless they are willing to go further into making a trade.
4. At the same time, shopkeepers are advised to disinfect any item being touched by a consumer to safeguard them from coming in contact with the virus.
5. Crowding of students, both inside and outside the barber's shop is a common observation. Henceforth, it is now mandatory to have an appointment in advance with the barber.
6. Masks, sanitizers, face shields, Handwash, and soaps will be made available for purchase at various points within the campus. So, students are requested not to visit Tech M for these items.
7. One cannot consume edibles with a mask on the mouth. Hence to prevent the opening of the mask by students inside tech M and to reduce their vicinity time with shopkeepers, eating and drinking of any consumables is strictly prohibited inside tech M. Students can however package the eatables and consume in their respective rooms.
8. To reduce direct contact with the shopkeepers, cash and debit/credit cards are not allowed for making payments. Even in the pre- COVID time, more than 90% of

- students used the online mode of payment and it is accepted at every shop. Hence it would not be difficult to take this to 100%.
9. Items should be disinfected before dispatching to a customer, while customers are also requested to disinfect the items once before use.
 10. Covid droplets spread into the atmosphere by covid positive, when no surface falls to the ground. Hence, the sanitization of shoes is as important as your hands. This can be done in multiple ways. One of the effective ways is using a shoe sanitizing mat. A video demonstration for the same is done in the video below:
<https://youtu.be/awtLCIbLSbs>
 11. Despite all the precautions, there is a possibility, a very small but there, of spreading of coronavirus inside the campus. Hence, the use of the Arogya Setu app is made compulsory within the campus. This will help to control the spread by making tracking of covid infected very easy.

Task 14. For the functioning of the campus, proper functioning of mess on a large scale will be a bigger challenge. Because it makes lots of suppliers move in and out of the campus. How do you plan to minimize the risk? Suggestions may include procuring dry ingredients at once, changes in the menu, etc.

Minimizing Chances of Spread from Mess Suppliers

The above goal can be achieved by ensuring the below-mentioned sub-goals

1. Minimizing the number of visits by the suppliers.
2. Allowing the entry of the suppliers only if certain requirements (mask, appropriate body temperature etc.) are met.
3. Ensuring no human contact with the suppliers (from the institute gate to the unloading of the goods and back).

1) Minimizing the Number of Visits:

A common menu can't be formulated for all the halls at once. But certain guidelines can be established to ensure minimization of visits and incentives can be given to ensure enforcement.

- A. All the grains and other edibles with considerably high shelf life should be stockpiled.
- B. Vegetables like potato and onions which are quite regularly used in the mess and can be stored for 10 days without refrigeration and thus should be stockpiled as well.
- C. A menu should be arranged keeping in mind the minimization of delivery rounds.

To provide an incentive for the above (especially the third point), an inter-hall competition can be held, based on the performance in limiting spread/chances of spread of COVID-19 (in the respective hall) and the number of visits by mess-suppliers can be put up as a criterion in the same.

2) Procedure of Entry:

The following procedure will strictly be followed at the time of the entry of the suppliers into the campus. Certain guidelines and requirements will have to be fulfilled to gain entry, failure to do the same will inevitably lead to the return of the delivery. To gain entry into the campus:

- A. All delivery personnel accompanying the goods should be wearing masks and gloves.
- B. Not more than 4 delivery personnel will accompany the goods.
- C. The temperature of all the delivery personnel will be measured and a fever of more than or equal to 100F should not be found, for even single personnel.
- D. No underage (less than 18 years of age) children should accompany the goods.

E. The person should have at least one functional mobile phone with them.
The personnel will now inform of their successful entry into the campus to the mess-contractor, via cell phone.

3) Ensuring No Contact when Inside the Campus:

When the entry is gained into the campus, the time spent on the campus, prior to exit can be divided into 3 parts,

- A. The passage from the entrance to the unloading.
- B. The unloading of goods.
- C. The passage post unloading and prior to exit.

A. Passage from the entrance to the unloading:

The delivery personnel should make no contact with anyone during the passage, the doors and windows of the vehicle (for trucks and vans), should remain closed.

To ensure the above, a rule will be formulated, if a student sees the violation of the above rule and reports with a photograph as proof, the student's hall will be awarded points in the aforementioned inter-hall competition and the supplier will be given a warning, if 3 such warnings stack-up, the supplier will be relieved of their services.

B. The unloading of goods:

No one will be present at the time of unloading, when the suppliers have unloaded, they will move out of the delivery area (and park at a distance, still adhering to *no contact*), then the mess contractor (also wearing mask and gloves) will check the delivered goods. If the quantity and quality, are up-to-the-mark, the contractor informs the same to the delivery personnel (via cell phone) and they start for the return journey. If the goods aren't up-to-the-mark, the same is relayed by the contractor to the personnel and appropriate action is taken.

C. The passage post unloading and prior to exit:

When returning post-delivery, the same guidelines of *no contact* as the entry time, are followed.

Task 15. There will be daily traffic due to the swimming pool, gym, various school children, their parents, etc inside IIT Kharagpur Campus. How will you tackle this traffic in order to minimize the risk?

Restricted entry of residents in the students' area.

1. The students' area will be from the institute main gate to the hospital.
2. Unless some resident has any need for any facilities from the student area they aren't allowed.
3. The shopkeepers entering from the main gate will use the tikka road/dreamland road to reach the market.
4. Securities will be at each crossing.
5. The students should be allowed to use both the cycle lane and road for less congestion and for that the above point needs to be enforced.

Restricted entry of workers and domestic service workers.

1. The worker for whom the Gas go-down gate, Prem Bazar gate and Durga mandir gate will be near will enter through those gates.
2. Most of the workers are requested to use any of the three gates.

3. If at all its not possible for workers to reach those gates, then the main gate is allowed for them only at particular times (mainly exam hrs. and lab hrs.) when there will be no student traffic.
4. No one will be allowed to enter the campus without any proper reason.
5. The workers have cards that they need to carry with them and show it every time they enter the campus.

Enter the Academic area for lab class

1. Students can enter through 5 gates (Nehru museum gate, main building gate, gate no. 5, the gate near RP Hall and gate beside BT dept.)
2. Students of CH, BT, ME can use the Nehru museum gate as their dept. is near to that gate. Students from CSE, Arch, CE can use gate no 5. Dept. wise students will be grouped so that the gate through which they will enter is near to their dept.
3. Students will trace back the same path to reach back to their hostel.

Manage traffic at a crossing near Tikka

1. There will be security to control the traffic. The traffic must not be stagnant near the crossing for more than 5 mins
2. Students must wear a mask and face shield and stand in three queues (one cycle behind another in a particular line) with a 5m distance between the two queues.
3. Students must ensure they don't talk in the queue.

Task 16. There are many small businesses in each hall, which fulfil the daily needs of many students. Would you allow such small businesses in halls to open? If yes, how do you plan to do it? If not, why do you want the businesses in halls to be shut?

- A. Inside every hostel, the following businesses exist in one form or the other.
- B. General stores
- C. Stationary
- D. Cafeterias or snack shops

General stores: these provide goods for daily usage. Basic things, ranging from toothpaste and soaps to instant snacks like Maggi, are sold here. Their functioning is quite essential for the students.

Stationary: these shops, provide all the products that are required by the students for their course. The products include notebooks, precision instruments, writing tools like a pencil. And also, a xerox machine is used a lot for sharing class notes and study material.

Cafeterias: they provide snacks to students. They operate throughout the night-time as well, and students often hang out with their friends here or relax after their study spells.

Let's consider the situation when these shops will be closed completely. Then the only option students will be left with will be the tech market. And this will lead to excess/unnecessary crowding, which can lead to the spread of the virus in the event a breakout does occur. Thus, we can see how the opening of these businesses will help in shifting the crowd from the main market and spreading over the shops in the hostels.

So, the answer is a **yes** to reopening the shops in halls of residence.

Now talking about operations and restrictions.

1. Students, as well as the shopkeeper, must wear a mask whenever they come to a shop to make a purchase. And social distancing must be followed.
2. At a time only two students will be allowed in a shop.
3. The payment should be made, primarily in cashless mode. Which is to reduce the risk of infection from sharing of currencies
4. Adequate supply must always be maintained in all shops so that students need not visit shops frequently.
5. The one-time purchase should be promoted. This means the student will make a complete list of all the different things he might need and procure them at a single visit so that he does not need to frequent between the room and shops.
6. The cafeterias can either be shut and it should be encouraged that students resort to instant snacks prepared by them in their rooms or packaged snacks. If the cafeterias decide to operate, then the takeaway system can be enforced. So, students can have the snacks though they cannot stay there. They will have to take it with them and eat in their rooms or some other uncrowded place.
7. The call and order facility can be introduced. Students can call the café owner and place his order and then come and instantly pick up the order.
8. Students can be allotted specific weekly slots based on their preference for visiting the general store and the stationary. In that single slot, they will have to purchase all the things which they feel necessary. Thus, we will achieve an even more evenly spread crowd.
9. Xerox machines are used a lot on campus. Till the time situation normalizes students may rely more on soft copies instead of hard copies.

Task 17. What all extra-curricular activities do you plan to allow on campus? Provide limitations of Interhall General Championship and open IIT activities. State the precautions that need to be taken for the same. Can implementation of government guidelines with respect to sports activities be possible inside the campus?

- 1) In accordance with the guidelines for reopening the campus for the students and resuming the academics, gathering a substantial number of people at the same place at the same time can lead to a potential Covid outbreak, thus the organization of extracurricular activities must be limited.
- 2) The major limitations of organizing various **Extra-Curricular Activities** in this pandemic situation are as follows:

(a) Working of Societies, Clubs, Research Groups and Reading Groups: The events and meeting conducted by various Societies, Clubs, Reading Groups and Research Groups have a minimum gathering of around 10 – 20 students simultaneously, which violates the social distancing norms, and hence all the activities, discussions, and events associated with these groups should be conducted online.

Conclusion: All societies and clubs which can organize their events in online mode must not gather in person for any event or discussions. Clubs or societies related to socio-cultural activities (like dances, dramatics, singing) must continue their activities through online mode. Tech clubs (like team Kart and the research groups) which require the use of institute resources or development of mechanical stuff (like robots, carts, etc) may be allowed to work collectively (in a group less than equal to 5 for a stipulated time) but only after written permission (for a genuine reason) from the **Dean – Students' Affairs**. In violation of the social distancing protocols, the provision to work collectively may be taken back indefinitely.

(b) Interhall General Championship:

1. **Limitations in Organising and Planning GC:** The organization of various events of the Interhall GC requires meetings and discussions between the student bodies and the administration, proper arrangements for various sports, tech and cultural events, which requires a considerable number of people to work together and gather. The meetings for planning may still be conducted through online mode, but the ground level setup requires administration, student groups and workers to work in proximity, which may hamper social distancing, triggering a large outbreak. So these have to be limited.
2. **Limitations in conducting Team Sports in GC:** The conduction of Sports events of the Interhall GC has its own challenges. In team sports like Football, Cricket, Volleyball, Basketball, the team members are in close contact during the matches, training sessions, discussions with the coaches and mentors, in changing rooms (without even masks as protection), which can easily lead to the transfer of body fluids (like sweat and saliva) from one person to another, spreading the disease.
Conclusion: Until a state of normalcy is established again, the team sport events must not be conducted in the Interhall General Championship. The players may be allowed to practice their sports skills in practice sessions (such as net practices) for future events, but not gathering more than 4 persons at a time (including the coach/trainer), with strict precautions and after obtaining written permission from the Technology Students' Gymkhana.
3. **Limitations in conducting Water -Sports in GC:** Sports like **swimming** can cause transmission of the virus from one person to another by transmission of body fluids through water, and can spread the virus to a large group of people.
Conclusion: All water sports including swimming must not be conducted in the Interhall GC till the situation normalizes completely.
4. Sporting events like Badminton (Singles) and Athletics (track events excluding relay races) have a lesser chance of spread of disease than team sports, as they do not require much physical contact between players, and hence may be organized with strict precautions.
5. **Socio-Cultural events:** Socio-cultural events that require individual participation can be conducted in online mode. Events like group dances, dramatics must not be conducted in the GC. Events like painting, poster making, etc can be organised by students participating in them from their hostel rooms as individuals, or in large open lawns ensuring proper social distancing. Dance and singing competitions can also be organized as solo competitions in the Kalidas Auditorium or in the Tata Open Air Theatre with proper social distancing between the various contenders and the judges. Elocutions may be conducted in online mode or in the same way as solo dance or singing competitions.
6. **Tech – Events:** Most of the Tech Events of the Interhall GC like Quizzes, Math Olympiad, Case Study can be prepared for and conducted through online mode. Particular events that require live demonstration of the projects, deliberations, or presentations can be organized in the Kalidas Auditorium or Tagore Open Air Theatre

with only 1 team (with a maximum of 5 students, maintaining proper social distancing) at a time in the auditorium along with the judges, and no audience.

7. **Audience:** To contain the spread of covid – 19, all the Interhall GC events must be conducted without allowing any non – participating students to attend the programme as an audience. Only the concerned administrative officials, management team and jury members must be allowed to preside over the events. Social distancing and sanitization norms must be followed by all.
8. **Felicitation and greeting events** must be done virtually to follow social distancing norms.

3) Other socio-cultural activities like the airing of movies on Saturday nights, and live airing of Sports matches in **Tagore Open Air Theatre** must not be organized till the situation normalizes. Guest talks and informative sessions should also be conducted through online mode. All other cultural activities should also be conducted in online mode.

4) Celebrations on Festivals and National Festivals for the year 2021 shall be conducted only by the Administration without the students as audience. The events can be streamed live on social media platforms.

Conclusion: With respect to Sports, it's an uphill battle to follow the Government's Guidelines.

Task 18. Considering our vast student community and the campus population, it is likely to have some positive cases inside the campus. What steps will you take if a student is tested positive? How would you perform contact tracing? Where will you quarantine them and how would you deal with the people who came in contact with the infected person?

Despite taking all the preventive measures and social distancing norms, the occurrence of Covid cases among the students staying on the campus cannot be ruled out. The following measures should be taken in such circumstances:

IDENTIFICATION AND TREATMENT FOR A COVID SUSPECT:

- 1) If a student is having **flu-like symptoms (fever, cough, sore throat, breathing difficulty)**, he/she must inform the hostel warden and visit the **BC Roy hospital** without delay. The students must understand that they should not neglect or try to conceal these symptoms from their parents, warden, or friends, for the safety of their own self and others. If a student or staff member observes these symptoms in any other student, they must inform the concerned hostel warden.
- 2) The suspected case if showing very mild/mild symptoms must be placed under an isolation facility (details regarding isolation facilities given later) and closely monitored. He/she would be sent for covid testing in the BC Roy hospital. The student must register his consent for isolation and testing through a consent form signed by him/her.

- **SOP for asymptomatic/mild symptoms positive cases:** If the test result is positive, the patient will be referred to the BC Roy Hospital. As per the treating doctors' advice, he/she will be hospitalized or undergo isolation in the respective hostel isolation zone (Patient must submit the necessary records from the hospital to the Hostel administration). The patient has to undergo 14 days of hostel isolation, during which he/she will be closely monitored by the clinic team. During the isolation period, if required, the patient may be referred to BC Roy hospital again on the clinical team's advice. Depending upon the severity, the patient may further be

referred to higher Health Care centres in Kolkata, as per the advice of the treating doctors at BC Roy Hospital. The student must duly fill a **Self-Declaration form** for all these procedures.

- If the test report is negative and the patient shows mild symptoms or no symptoms at all, the patient will undergo **14 days hostel quarantine**.
- If the test report is negative, but the patient is having moderate to severe symptoms, exactly the same procedure must be followed for his/her treatment as that for a covid-positive student.
- Suspect cases with moderate to severe symptoms will be treated as per health protocol inappropriate health facilities.

3) After proper treatment of the covid positive patient in the concerned hospital, he may be discharged from the hospital at the discretion of the treating medical team, however, two consecutive negative COVID reports after complete recovery are mandatory as per govt guidelines. After being discharged from the hospital, the student must undergo 14 days of isolation in the respective hostel isolation zone (to rule out any further possibility of infection from the patient), while continuing his academic work online. He/she will be closely monitored by the medical team during this period.

4) The concerned Hall Warden should take note of the details of the positive student and communicate all the information (regarding the treating hospital, doctors, treatment protocols) to the students' parents/guardian. The information shall also be furnished to the DOSA and the Faculty Advisor of the concerned student.

CONTACT TRACING:

1) Necessary procedures for contact tracing and disinfection will start once a student is recognized as covid suspect (with moderate/severe symptoms) or covid positive. The concerned hostel administration, the sampling team, the doctors' team and the institute officials must work hand in hand for contact tracing, monitoring and disinfection.

2) We suggest that the Institute must appoint a **Covid Task Force** consisting of administrative officials and professors, to supervise all the covid – related procedures. One of the segments of the Covid Task Force should be the Medical Coordination Task Force, which will coordinate with the medical authorities and the contact tracing teams of BC Roy Hospital for this purpose.

3) The covid positive patient will be enquired of all the persons he had met in the last **48 hours** from the time his report came positive by the contact tracing team. Thereby, a flow chart will be created of the contacts, categorizing them into high – risk exposure and low-risk exposure contacts. **The Medical Coordination task force** must furnish all the details of the contacts to the contact tracing and sampling teams. The positive student is expected to cooperate with the contact tracing teams and provide all the required information.

4) Criterion for High – Risk and Low – Risk Contacts:

- **High-risk contact:** Touched body fluids of the patient (respiratory tract secretions, blood, vomit, saliva, urine e.g., being coughed on, touching used paper tissues with a bare hand). Had direct physical contact with the body of the patient including physical examination without PPE kit. Touched or cleaned the linens, clothes, or dishes of the patient. Visited or stayed in the same hostel room as the patient for more than **1 hour**. Anyone in close proximity (within 1 meter) of the confirmed case without precautions. Passengers in close proximity (within 1 meter) in a conveyance with a symptomatic person who later tested positive for COVID-19 for more than 6 hours.

Students, staff or professors who talked to the patient for more than 15 minutes.

- **Low-risk contact:** Contact shared the same space (worked in the same room/similar) but not having a high-risk exposure to a confirmed case of COVID-19. Travelled in the same environment (bus/train/flight/any mode of transit) but not having a high-risk exposure.

5) According to the classification above, we proceed as follows:

- **The High – risk contacts:** must undergo quarantine in their respective hostel for 14 days to contain further spread of disease, and closely monitor their health. They must report to the Hostel administration in case of any flu-like symptoms. The sampling teams would then contact all these contacts of the patient, and they would be tested for covid.
- **The Low- Risk contacts:** should continue their work and closely monitor their health for the next 14 days. They are strongly advised not to meet other persons unless absolutely necessary (and should follow the social distancing protocols strictly).

DISINFECTION:

- 1) The hostel room of the covid suspect/positive student must be thoroughly sanitized by the sanitization team under the supervision of the hostel administration, and then to be closed for **72 hours**. The room shall be sanitized again after **72 hours**.
- 2) All the places visited by the positive patient/ suspect during the last **48 hours** (including classrooms, labs, balconies, stairs, mess, offices) shall be thoroughly sanitized. There is no need to close the entire workplaces or areas in case of one or two positive cases, and the concerned staff and personnel can resume their work after proper sanitization. The sanitization of all labs/offices/classrooms/toilets must be done as per the guidelines issued by the MOHFW.
- 3) In case of a large outbreak, the building/block needs to be closed for **48 hours** and after disinfection can be declared fit for reoccupation.

QUARANTINE AND ISOLATION FACILITIES FOR COVID SUSPECTS/POSITIVE CASES:

- 1) The **Quarantine Facilities** are meant for students who:
 - are healthy asymptomatic persons which came in contact of a covid-positive patient and are in the High-risk exposure category.
 - have given their samples for COVID testing and are awaiting the results of the testing (which may take 2 – 3 days).
- 2) The **Isolation facilities** are meant for those students who:
 - who will be required to be in isolation for 14 days or more after discharge from the hospital following the treatment for COVID 19, as per the advice of doctors?
 - who are COVID 19 positive but could not get admitted to a city hospital due to a shortage of beds. Here, it will also be used as a transit facility until the patient is referred to a higher hospital.
 - have a fever or flu-like symptoms or any other COVID like symptoms.
- 3) **QUARANTINE FACILITIES:** About **25 per cent** of the rooms in all the Boys and Girls Hostels of the campus will be procured for the purpose of Quarantine.
 - We suggest that all these rooms for quarantine must house only one student at a time, and all these rooms are located in the same wing and on adjacent floors for the purpose of easy monitoring and care.

- Given the large strength of the students, it is not possible to have attached washrooms along with each room. In the halls which have one toilet per 2 – 3 rooms, the quarantined students must coordinate the user such that they use the same specific toilet and bath area every time, since each bathroom has 2 – 3 bath areas and toilets, so these can be divided for use. The toilets in the quarantine zone will be sanitized thrice a day (morning, afternoon, evening).
- After a person's quarantine period is over, the particular room must be kept vacant for **3 days**, and then thoroughly sanitized before use for the next occupant.
- The student belonging to a Hostel who needs to be quarantined must be quarantined within the same hostel. If the Quarantine facility of the respective hostel is full, he/she may be shifted to another hostel's Quarantine Facility.
- The students in Quarantine will be closely monitored by a **Protocol Monitoring Team** (1 team per hostel especially for monitoring the Quarantined students) and a **Medical team** (3 for all the Boys Hostel and 1 covering all the Girls Hostel).

4) ISOLATION FACILITIES:

- All the guest rooms in all the BOYS and GIRLS hostels have an attached washroom, and hence can be used for the purpose of Isolation of students, which account for a total of **98 guest rooms** that can be used as isolation rooms.
- Also, out of the **789 rooms** in the **MMM hostel** (of which 25 per cent are in use for quarantine), around **100 rooms** can further be used for isolation purposes for boys. Similarly, of the **1390 single rooms** of the **BR Ambedkar Hall** (of which 25 % is in use for Quarantine), another **150 rooms** can be used for the isolation of boys.
- Out of the **250 rooms** in **Rani Lakshmi Bai Hostel**, around **40 rooms** can be reserved for isolation purposes. Similarly, around **30** out of 213 rooms in **SN/IG Hall** can be used for isolation purposes. Out of the 98 guest rooms in total, **1 in Gokhale Hall, 5 in Sister Nivedita Hall, 8 in Rani Laxmi Bai Hall and 50 in SAM Hall must be used solely for the isolation of female scholars.**
- All these rooms for quarantine must house only one student at a time, and all these rooms are located in the same wing and on adjacent floors for the purpose of easy monitoring and care.
- All the isolation rooms (apart from the guest rooms which have attached washrooms) should be selected such that each occupant has access to a washroom that is used only by him/her. The toilets in the isolation zone will be sanitized thrice a day (morning, afternoon, evening).
- The students in Isolation will be closely monitored by a **Protocol Monitoring Team** (1 team per hostel especially for monitoring the students in Isolation) and a **Medical team** (3 for all the Boys Hostel and 1 covering all the Girls Hostel).

5) MEDICAL FACILITIES AND HOSPITALISATION:

- The covid positive/ suspected patient will first be treated by the doctors in **BC Roy Hospital**. Due to the lack of facilities for isolation and treatment of covid patients in BC Roy Hospital (due to remoteness of Kharagpur town), the patient may be referred to higher Medical centers in **KOLKATA** for treatment.
- The IIT KGP administration is in close contact with eminent hospitals like **Peerless Hospital, Medica Hospital, Ruby Hospital, Desun Hospital and Kothari Hospital** in **Kolkata**, which are treating covid patients. The administration should be in close contact with these hospitals with respect to the treatment of the students.

3. However, we also strongly suggest that the newly inaugurated Super-specialty block of the BC ROY Hospital be made functional as soon as possible to be used as a covid-dedicated hospital (as had been done in some other Indian cities) for providing covid treatment for the entire Kharagpur community in these testing times.
4. The institute administration in cooperation with the concerned local and state authorities should work towards this necessity.

Task 19. In the scenario that the campus reopens in the near future, what is your detailed plan to complete labs that are currently incomplete, given the virtual semester ? How do you plan to deal with academic challenges like missing lab classes that the students in isolation/quarantine will face? What new policies can be of help?

Lab classes-

1. All the theoretical and presentation work involved in the subject should be continued in virtual mode (taking all the precautions).
2. Lab experiments should be conducted in offline mode under the supervision of the teaching assistants.
3.
 - a. Labs should be conducted according to a priority order. For eg. first conduct the final year labs, then the pre-final year labs and so on.
 - b. Incomplete labs should be conducted in the extra slots which don't overlap with the standard class slots. Students in a lab have to be divided into batches in order to minimize the interactions. For eg. if a lab course consists of nearly 100 students, then they should be divided into 4 batches of 25 students each. And these 4 groups should be allotted different time slots.
 - c. After each slot the labs should be sanitized properly.
4. Labs should be kept open till night 9PM including weekends so that there are enough time slots to conduct the incomplete labs.

For students who miss their lab classes during the quarantine/isolation-

1. Faculty advisor of the concerned student should communicate with the lab faculty and make suitable arrangements so that a student doesn't lag behind in the laboratory courses.
2. During the isolation/quarantine period, the student can attend the lab in online mode and prepare his/her lab report if they are not severely ill.
3. Once their quarantine period is completed the student can continue with the group allotted and carry out the remaining experiments.
4. Extra slots should be assigned to each laboratory course.
5. For missed lab classes, the student can learn about operating the instruments which might be useful in future labs in the extra slots

Task 20. A new batch of first-year students will join us from next semester. Can you suggest any new innovations in the first-year curriculum? For example - If someone decides not to go for a department change, then what's the need of him/her taking the full 45 credit year? Keeping this in mind, give a reduced first-year curriculum. Give a mathematical model for assessing the impact of how many interactions can be reduced in large classrooms in such a reduced curriculum setting .

Proposed Curriculum for students not opting for Department Change:

Semester 1

1. Advanced Calculus
2. Programming And Data Structures
3. Programming And Data Structures Laboratory
4. Introduction To Department
5. Floating Subject-i
6. Extra Academic Activity-i

Semester 2

1. Linear Algebra, Numerical And Complex Analysis
2. English For Communication
3. Department DIY Project
4. Floating Subject-ii
5. Floating Subject Lab-ii
6. Extra Academic Activity-ii

Floating Subjects-i

1. HSS Breadth Courses
2. Physics Of Waves
3. Engineering Drawing And Computer Graphics

Floating Subjects-ii

1. Physics Of Waves
2. Physics Laboratory
3. Basic Engineering Mechanics
4. Introduction To Manufacturing Processes
5. Electrical Technology
6. Electrical Technology Lab
7. Chemistry
8. Chemistry Lab

Note: Please refer to Annexure B for the complete details of the subjects mentioned above.

Modifications:

1. A new subject is added “Introduction to the department” which will be department specific, such that no prior background is required. It will be an innovative course. This subject will have only 2 credits and it will be evaluated based on the class participation and the presentation.
2. We have introduced floating subjects, all of which are not necessary for all the departments. Students will be allotted a floating subject as per their department and the relevance to their future department courses.
3. Credits of Floating-I subjects will be increased to 4 credits.
4. Extra Academic Activity will have 0 credit.
5. Physics of waves in Floating Subject-I is allotted to ECE, EE, IE students as they require the theoretical knowledge of Physics in their future department courses. They need not do the lab course as it is not a prerequisite in their department courses.
6. Introduction to manufacturing processes and Electrical technology laboratory should be re-introduced in the curriculum

Mathematical Modelling:

1. In the current curriculum, a student will have nearly 30 hours of classes per week (including EAA). In the proposed curriculum, per week, a student will have nearly 11.5 hours of classes of compulsory subjects per week (excluding department-specific courses) and 8.5 hours of floating subjects and department-specific courses.
2. In order to propose a mathematical model, we assume that the class strength of the subjects in the current curriculum is 100. In our proposed curriculum we assume that the strength of the compulsory subjects (excluding department-specific courses) is 100 and that of floating subjects and department-specific courses is 50.
3. Now we define a function $f(x,h)$ which measures the number of interactions in a class of strength x over a duration of h hours.
4. In a class of 100 students, we expect a student to interact with at most 6-7 students in one hour whereas, in a class of strength 50, we expect a student to interact with at most 3-4 students in one hour.
5. So we define $f(100,h)=7 \times 100 \times h$ and $f(50,h)=4 \times 50 \times h$
6. Percentage of reduced interaction per week = $(f(100,30)-f(100,11.5)-f(50,8.5)) \times 100/f(100,30)=53.57\%$

Conclusion: According to the mathematical model, **the interactions are reduced by 53.57%** in the proposed curriculum when compared to the current curriculum. Therefore, our proposed curriculum indeed helps to reduce the spread of the virus in a classroom environment.

Task 21. There will be instances wherein people might have to travel outside the campus due to various reasons like Internships, visiting home, personal emergencies, etc. How do you plan to accommodate such cases?

1. Covirap:

- a. As cited in an article by Awaaz, Covirap is found to be 93% sensitive and 98% specific for samples of CT values 35-36 or below relative to the labelled samples generated by RT-PCR.
- b. As this technique gives results in approx 1 hour, we can use it as an initial screening for allowing a person inside the campus.
- c. As the cost of this test is also just INR500 (Approx), so the person can manage the cost at his own level.
- d. (Refer point no 2 of the following article [The Claimed, They Showed, and then Faltered - Awaaz, IIT Kharagpur \(awaaziitkgp.com\)](http://awaaziitkgp.com))

2. Quarantining:

- a. If the person has some covid symptoms even after the negative report of Covirap, we can quarantine him or her for 1 week, or if the budget allows we can also get the RT-PCR report after quarantining him/her for only the time till his or her report comes.
- b. (Suggestion- For the places of quarantining, we can refer to the article released by Awaaz(Refer point no 1 of the following article [They Claimed, They Showed, and then Faltered - Awaaz, IIT Kharagpur \(awaaziitkgp.com\)](http://awaaziitkgp.com))in which it is clearly mentioned that the institute proposed 750 beds in Dr. Syama Prasad Mukherjee Institute of Medical Sciences & Research (then Dr. Bidhan Chandra Roy Institute of Medical Sciences & Research) or we can refer to the post released by the student senate on reopening of college in

which they clearly mentioned the presence of rooms in Technology Guest House, New technology Guest House, Visveswaraya Guest House, Kolkata Guest House for quarantining in the campus.)

- c. (Link to the post released by VP: [Students' Senate meeting with the administration - Google Docs](#))

3. Covid Task Force:

- a. As suggested by the student council in their resolution on reopening of campus, we should organize a covid task force, consisting of representatives of students as well as the institute members.
- b. Every person who goes out of campus should be permitted by this covid task force on the basis of the importance, validity, and time needed to do the task.
- c. Even before coming back to the campus, he/she should inform in advance to the committee so that the necessary measures could be taken to take him/her back to the campus. To implement this thing in a smooth way, a mobile application could be developed for the communication between the task force and the person.

4. Aarogya Setu App:

- a. This application should be made mandatory for all the persons who are going out of campus.
- b. This application should be checked on the main gate of the campus every time any person goes out and comes back to the campus.
- c. This application will ensure the safety of the person when he or she will be out of campus and will also help the institute in determining beforehand whether the person was infected or not when he was out of the campus.
- d. (suggestion- The institute could devise its own application to check whether the person is visiting the same place which he has informed to the committee because the committee should allow the movement of people only to the places where the covid cases are less in number.)

Task 22. If you give winter vacation, people are bound to travel back. If this is the case, you will need to do the complete exercise of testing again post their arrival (hopefully for Spring'22). Is it cost and time-worthy to give a vacation? Or do you plan to start the spring semester early and end it early?

Allowing vacations in the pandemic situation comes with added considerations and implications.

Risk factors involve:-

- 1) Students going on vacation might get covid during or after the trip, especially there is a high risk during travel.
- 2) The student affected from covid when returns might end up infecting others
- 3) Pre and post-vacation management expenses are going to be high
- 4) The pre and post-vacation regulation will require highly strict monitoring that ensures the code of conduct is properly followed and failing to do this might create a critical situation that is difficult to manage.

Looking into the risk factors involved it is highly recommended to curtail vacations and travel permits to students given the fact that students have already spent over a year at their home. Travelling to far off places can be permitted in case of an emergency or unavoidable

circumstances on a personal front. A code of conduct is to be laid and stringently followed during such a scenario.

In all other cases, it is advisable to give short breaks inside the campus where students can utilise the break fruitfully by engaging themselves in other activities until the situation normalises and to start the spring semester early and end it early.

Code of conduct to be followed in emergency case:-

1. Pre-travel:

- a. Authorities to be informed 3 days before the travel along with substantial reasons for travel
- b. Covid test 2 days before travel is mandatory
- c. Travel to be permitted only when the test comes out to be negative
- d. It is advisable that students should avoid going to crowded places before travelling.

2. During travel:

- a. Stay at least 6 feet apart from fellow travellers
- b. Wear a mask, gloves and use hand sanitizer
- c. Avoid going too close to crowded places
- d. Minimise the use of public toilets

3. Post-travel:

- a. It is mandatory to be under 14 days quarantine immediately after the travel
- b. A covid test after 14 days is to be conducted
- c. If the covid test comes out to be negative then the student is allowed to resume his usual day to day activities
- d. It is advisable that even after the covid test students should avoid meeting too many people and going to crowded places
- e. If the COVID test comes out to be positive then covid guidelines for covid affected needs to be followed

Task 23. Keeping the health facilities at campus and their capacity to cater to COVID +ve patients in mind, if for some reason, the case count of covid-19 patients increases dramatically inside the campus, what action plan do you suggest along with the threshold that will trigger those plans.

- For operational purposes, a large outbreak is deemed to be present when the number of cases will be more than 15% of the total strength of a hall.
- In such cases, there will be a geographical quarantine imposed on that hall.

Guidelines to be followed

1. No one (except medical staff) will be allowed to enter or leave the hostel premises.
2. as soon as the local cluster in a hall is detected: -
3. The students will be divided into the following three categories
 - a. **RED** - Those who are found positive.
 - b. **ORANGE** -Those who were in direct contact with the students who were found positive or those who show symptoms.
 - c. **GREEN** - Those who were not in direct contact and do not show any symptoms.
4. Hall will be divided into three different zones to accommodate the above students in a fashion such that the people of the same category get the same wing to cater for the facilities in an efficient manner.

5. According to their respective categories, the students will be issued ID cards which they are expected to carry everywhere they go.
6. All hall staff members should also stay inside the hall.
7. The following information must be collected from all the residents: contact details and emergency contact numbers, blood group, and any known medical conditions/comorbidities.
8. Cleaning of the corridors and washrooms will be done during a fixed 2–3-hour slot during which the residents will be required to stay in their rooms. The workers who will do the task of cleaning will be provided

Guidelines for a student in the RED category

1. Should stay in their room only. Can go outside only for using washrooms. Food parcels will be provided at the door.
2. If the condition is severe. Then shifted to BC Roy hospital or some other nearby hospital.
3. Medical staff will visit their room daily/every alternate day to check upon their conditions.
4. They will be given prescribed medicine.
5. Will be shifted to category II when they get 2 consecutive negative tests.
6. Covid tests will be performed once every week.
7. They would be supplied with pre-treated garbage bags. Residents are supposed to put their waste in them and then thoroughly sanitize the bag. These bags will be collected from outside their doors by the volunteer.

Guidelines for a student in the ORANGE category

1. A wing coordinator will be selected to supervise and ensure smooth conduction of all the activities in that wing.
2. Covid test of the residents will be performed once every 2 weeks
3. If they get 2 consecutive negative tests (or three consecutive negative tests if they are previous students of the RED category) they will be shifted to the GREEN category.
4. A WhatsApp/Facebook messenger group of each wing will be formed and in that, they have to report their health conditions daily. They are supposed to monitor themselves and check for the symptoms and report their status in that group.
5. Food parcels will be handed over to the wing coordinator and then he will oversee their distribution in the wing.
6. A large trash can will be placed in each wing and the wing coordinator will be supplied with pretreated garbage bags. Residents have to dispose of their trash in this bag and the wing coordinator will remove the bag each day and place it at a designated place, from where it will be collected by sanitation workers.

Guidelines for a student in the GREEN category

1. Guidelines number 1 and from 4 to 6 of the orange category are applied to them also.
2. they have to elect a committee which will foresee and ensure smooth conduction of everything in the hall.
3. Residents should volunteer to deliver food parcels in the red area, and collect their garbage bags.

Guidelines for the committee members

1. They should have a well-formulated plan, in case a hall is declared a containment zone, in line with the above guidelines.

2. In case any of the members of the committee falls ill, another person should take over his responsibilities.
3. It will be their duty to hand over food parcels to the wing coordinator.
4. They will ensure that it is not the same volunteer who goes to the red area repeatedly, and if there are not enough volunteers then they will assign the task to other residents who are not volunteering.

Task 24. Nominate your dream team (faculty + students + staff) to implement the exercise of opening the campus and keeping it open. Clearly define the hierarchy, assign job roles, responsibilities, powers, etc.

DREAM TEAM

Faculties

As there is already a well-established hierarchy in the administration and people appointed for a normal day (Let it be BCRoy in charge, HMC committee, etc). Including them, are the extra helping hands and positions that should be adhered to.

GATE DUTY:

Teaching Staff:

- Professors will be monitoring the slots in which the students are entering. If there is a heavy crowd at a particular time slot, which can be forecasted by a dynamic portal on ERP, they can divert some students towards another gate.
- To coordinate entry and exit of students for the first 2 weeks of opening campus
 - Prof. Rajakumar Ananthakrishnan
 - Prof. Mantu Kumar Mahalik
 - Prof. Uday Shankar
- 1-2 professors will be responsible for monitoring the time checking and monitoring the medical reports uploaded by the students on ERP and can issue them an approval slip through ERP.
 - Prof. Partha Pratim Chakraborty
 - Prof. Archana Patnaik

Non-teaching Staff:

- They should stay at gates all the time during the entry and exit process of students
- See to it that there is a thorough temperature check at the gates of every person who enters and whether he is following the proper SOPs like wearing masks and has sanitized himself
- Also go through the special cases (Other than students, other people who want to enter must provide genuine reasons)
 - Heads of the Security Department
 - Gate personnel and other security staff

Student Body:

- Responsible for proper crowd management at their hall of residence
 - Hall President and Second Senate Member of every hall of residence

HOSPITAL BODY:

(To coordinate treatment and discharging of covid positive cases if any)

Teaching Staff:

- The professors will pay daily visits to the hospitals and take in info regarding the situation there to inform the Dean SA
- Info like how many students are currently admitted, how many are in require of special assistance, how many need to be shifted to Kolkata or otherwise
- They will also take the charge of contacting the parents and talking with them to ascertain that everything is well and fine
 - o Prof. Soumen Das
 - o Prof. Jeetendra Mahakud
 - o Prof. Ashok Mishra

Non-teaching Staff:

- To stay at all times at BC Roy and other hospitals where students from the college are admitted
- To hourly go and check on the students admitted whether they are feeling ok or not
 - o Mr. Manab Kundu
 - o Incharges of Medical Department, BC Roy
 - o Other Medical Staff and Nurses

Student Body:

- To keep a check on the number of students going in and out from their respective halls to the hospital let it be for a random checkup or covid and also see to the transportation as they need to be properly sanitized before and after use too for taking the students to the hospitals
 - o General Secretary and Secretaries, Student Welfare of every Hall of Residence

HOSTEL DUTY (MESS/ACCOMMODATION)

Teaching Staff:

- Taking charge of every decision like whether to allow entry and exit of a student
- All the Audit and Budget related things
 - o Wardens and Assistant Wardens of their respective halls

Non-teaching Staff:

- Will oversee the transactions like the entry of food rations, first aid kits for every room
- Will be the point of contact if any discrepancy occurs and the student representatives are not able to handle it
 - o Hall Management Centre(HMC) Staff
 - o Respective Hal Managers of every Hall of Residence

Student Body:

- Will see to it that the Mess halls are sanitised regularly, there is no closed gathering of students, the rooms and corridors are regularly sanitized and cleaned
 - o General Secretaries and Secretaries, Mess and Maintenance along with student selected for each floor assist the wardens and assistant wardens

HYGIENE AND SANITIZATION DUTY:

(To look over if the dept. labs and auditoriums are sanitised and kept clean)

Teaching Staff:

- To be the point of contact for the students if they face any issues during the labs and otherwise
- Will sanction proper sanitization kits for the assistants and pay a regular visit during ongoing labs to check whether everything is being handled properly or not

- o Head of the Departments along with 2 assistant professors

Non-teaching Staff:

- Peons and lab assistants too
- Will regularly sanitize all the instruments and also check the temperatures of students before entry and whether they are following proper SOPs or not
- Will regularly refill a Hand Sanitizing Machine that needs to be attached near the entry door
 - o Lab personnel
 - o Department Staff

Student Body:

- The Department Representative of every department is responsible to look after this part in the Student body.

FOR THE LECTURE CLASSROOMS (Nalanda)

Teaching Staff:

- To handle any chaos that occurs in the process
- To sanction the sanitization kits and regularly pay a visit to the ongoing classrooms to see whether everything is going well or not (If they have clashing classes at the same time, they must find an alternative for that purpose)
- To regularly contact the non-teaching staff and take a proper note of all the problems faced to report to Dean Student Affairs
 - o Prof. Mihir Sarangi
 - o Prof. Priyadarshi Patnaik
 - o Prof. Mihir Das
 - o Prof. Tapan Kumar Nath
 - o Prof. Jeetendra Kumar

Non-teaching Staff:

- To look over proper sanitation of classrooms, corridors and whether proper SOPs are maintained during classes in that floor
- To check the temperature of the students before entry to the classrooms
 - o Nalanda Staff
 - o Security guards

Student Body:

- Students responsible for this part in the Student Body are
 - o Vice-President, and General Secretaries, Student Welfare of Technology Students' Gymkhana
 - o UG, PG and RS Representatives from the Student Council

FOR ALL EMERGENCIES:

(To be contacted if any chaos or doubt in handling the situation occurs)

Teaching Staff:

- The 4 Deans and administrative office
 - For extreme emergency only
- Heads of respective departments
 - For help or situations that couldn't be handled by the profs appointed for the same or you couldn't contact the same
 - To help and redirect the problems to the appropriate authorities

- All student position holders under Gymkhana (VP, Sports and cultural representative, etc)
- All professors can be contacted for an emergency but these should be the first point of contact
 - Prof. William K Mohanty
 - Prof. Pallabh Dasgupta
 - Prof. Joy Sen
 - Prof. Aurobindo Routray
 - Prof. Priyadarshi Patnaik
 - Prof. Narayan C Nayak
 - Prof. Shailendra Kumar Varshney
 - Prof. CS Mishra

Student Body:

Hall Council is the Point of Contact in each Hall of Residence, their contact details should be displayed in the Hall Notice-board.

COST ESTIMATION AND FEASIBILITY

1. Estimate the total cost for your proposed plan. Total cost should include the expense at every step of the proposal i.e. Testing, quarantine services, surveillance, contact tracing, etc. Mention suitable assumptions for charges involved (like ward charges for quarantine) and any suitable covid related hospitalization expenses.

	Commodities	Quantity	Cost
1.	Oximeter	1000 (one time)	200 per piece
2.	Thermometer	1000 (one time)	90 per piece
3.	Rapid Testing For all students, staff (teaching and non-teaching). [This test kit can be used for 25 tests]	40 Kit(weekly)	Rs.175 per kit
4.	RT-PCR	50 (weekly)	Rs. 950
5.	Sanitizer	100 roughly (weekly)	Rs 700 per 5L
6.	Foot-operated sanitizer stand	100 roughly (one time)	Rs.1000
7.	Handwash	200 roughly (weekly)	Rs. 600 for 5L
8.	Domex Toilet Cleaner	100 roughly (weekly)	Rs. 645 for 5L
9.	Infrared Thermometer	60 roughly (one time)	Rs. 475
10	Alcohol swipe	3000 box (weekly)	Rs.40 per box
11	Sanitizer Mat	100 roughly (one time)	Rs 400 per piece

12	UV air purifiers	200 Lab rooms	Rs.12000
13	N95 Mask	1000 (one time)	Rs. 50 per mask
14	Vinyl Gloves	10000 (weekly)	Rs. 10 per pair
15	Treatment cost of a COVID Positive	2 students per week.	Rs. 2 Lakhs for 14 days
16	Testing cost of those in close contact	500 (weekly)	Rs. 950

Total one time Cost Estimation = $1000 \times 200 + 1000 \times 90 + 100 \times 1000 + 60 \times 475 + 100 \times 400 + 200 \times 12000 + 1000 \times 50 = \text{Rs. } 29,08,500$

Estimated Total expenditure per week = $40 \times 175 + 50 \times 950 + 100 \times 700 + 200 \times 600 + 100 \times 645 + 60 \times 475 + 3000 \times 40 + 2 \times 2,00,000 + 500 \times 950 + 10000 \times 10 = \text{Rs. } 14,32,500$ per week

Reference Links for cost

1.	https://www.indiamart.com/proddetail/finger-pulse-oximeter-23260250262.html
2.	https://www.indiamart.com/proddetail/clinical-digital-thermometer-22313665562.html
3.	https://pdf.indiamart.com/impdf/22254208997/MY-3499228/covid-19-rapid-test-kit.pdf
4.	https://timesofindia.indiatimes.com/city/kolkata/rt-pcr-test-price-capped-at-rs-950/article_show/79554397.cms
5.	https://www.flipkart.com/mony-care-plus-advance-rub-75-alcohol-content-hand-sanitizer-can/p/itm8b71d1201bdb5?pid=HWSGYJSNEUG7ZPZ3&lid=LSTHWSGYJSNEUG7ZPZ3GOHVQS&marketplace=FLIPKART&store=g9b%2Fema%2Frhm%2Fjrn&srno=b_5_185&otracker=browse&fm=organic&iid=66e1b3d5-7230-4b4a-b8b9-43de17b83ee0.HWSGYJSNEUG7ZPZ3.SEARCH&ppt=browse&ppn=browse&ssid=7l7hu2s3sw0000001617558601633
6.	https://www.indiamart.com/proddetail/floor-mounted-foot-operated-sanitizer-machine-2377485455.html
7.	https://www.indiamart.com/proddetail/5-litre-lifebuoy-handwash-liquid-22440838691.html
8.	https://www.amazon.in/DOMEX-UNILEVER-Cleaner-Formula-5-Litres/dp/B07K5C32ZD
9.	https://www.indiamart.com/proddetail/medical-noncontact-ir-infrared-thermometer-22423595630.html
10.	https://www.indiamart.com/proddetail/isopropyl-alcohol-swab-7950054391.html
11.	https://www.indiamart.com/proddetail/shoe-sanitizer-mat-22335397862.html
12.	https://www.amazon.in/Philips-AC1215-20-Purifier-White/dp/B01L6MT7E0?ref_=Oct_s9_apbd orebs_hd_bw_b5tg8Dv&pf_rd_r=CA6M1A7EHA9YBPGFVVC2&pf_rd_p=9e9

	20fe5-dba2-52a4-990d-2e249578d13e&pf_rd_s=merchandised-search-10&pf_rd_t=BROWSE&pf_rd_i=5403404031
13.	https://www.indiamart.com/proddetail/n95-face-mask-3979521030.html
14.	https://www.indiamart.com/proddetail/vinyl-examination-gloves-20656836897.html
15.	https://timesofindia.indiatimes.com/city/kolkata/panel-fixes-bed-charges-for-covid-patients-at-pre-pandemic-rate/articleshow/77697663.cms

Reasoning Behind Quantity Estimation

Commodity	Reasoning
1.	An oximeter is to be purchased by individuals before entering the campus. We assume there must be students for whom purchasing an oximeter may be financially difficult or those who live in inert areas. We assume 1000 students to fit these circumstances.
2.	Same as an oximeter, the thermometer is to be purchased by individuals before entering the campus. We assume there must be students for whom purchasing an oximeter may be financially difficult or those who live in inert areas. We assume 1000 students to fit these circumstances.
3.	We believe that around 1000 testing would be required every week, after full strength accommodation of students. They will be tested by the rapid testing method.
4.	We do an RT-PCR test for symptomatic students when a batch of 1000 returns to the campus (see Task 2). We expect at most 5% of them to be symptomatic.
5.	Sanitizers are to be installed only at entry and exit points. The calculation goes this way, 20 departments, 3 for each; 20 halls, 1 for each, and 20 spares; which is a total of 100 Five litre bottles.
6.	As per the above calculation, we need a total of 100 foot-operated sanitizer stands.
7.	Additional Hand Wash liquids had to be placed at every wash Basin. The calculation is as follows: 20 for the 20 messes of the halls, 4 per department which makes a total of 100. 10 for Nalanda, and other places like gymkhana, etc. We expect a total of 200 five-litre bottles weekly. This is for taking extra precautions.
8.	For extra sanitazation of various places, in addition to the current stock of toilet cleaners, we think as per the similar calculations above we need 100 Domex Toilet Cleaner
9.	The infrared thermometer is to be used at entry points. 20 for the department, 20 for halls, 10 for the community places, 10 spares. This makes a total of 60 infrared thermometers. This is a one-time investment.

10.	We assume that 20 swipes will be used per student per week. Hence on average we need $15000 \times 20 / 100 = 3000$ boxes per week. Note that each box contains 100 alcohol wipes.
11.	Sanitizer mats are to be installed at entry and exit points. Its number is thus the same as the installation points of sanitizer i.e., a total of hundred. This is a one-time investment.
12.	Since the ventilation in labs is not so good, we would require UV air purifiers for most of the research labs accounting for a total of 200 of the same for time being.
13.	For 1000 mess and maintenance staff we want to keep a stock of 1000 masks
14.	Each of the 1000 mess and maintenance staff is expected to use 10 vinyl gloves per week to ensure the safety of everyone.
15.	We don't expect more than 50 students to be infected by coronavirus per week if the rules and regulations are followed seriously. Out of that, we don't expect more than 5% of students to be severely ill and be seriously ill and be shifted to Kolkata covid hospitals. Hence we believe on average per week 2 students might get hospitalized.
16.	We don't expect a corona positive patient to be in close contact with more than 10 people before they were tested positive. Hence we will test at most $50 \times 10 = 500$ people per week during the process of contact tracing.

Note: We believe that for quarantine services, we don't require any additional budget as we will be taking the help of the existing hall resources. We refer the reader to Task 18 for complete details about the quarantine setup.

2. It would be rather inhumane to ask the current faculty, staff, and managers to do all this extra work for keeping the institute open. You will need a team of additional workers/ contractual staff to do most of the jobs as identified in the questions & in your proposals. List them and mention suitable agencies that can provide these services. Estimate how much extra amount would be needed for the same.

Extra Staff Requirement

- Mess Workers:** For Task 4, we need 5 extra mess workers per hall for halls of capacity more than 600 and 3 extra mess workers per hall for other halls. Hence according to our rough estimation, we need around $10 \times 3 + 10 \times 5 = 80$ extra mess workers. Here we assume that our model deals with 20 Halls of residence.
- Sanitization Staff for academic areas:** We estimate that each department requires 3 additional workers in order to sanitize the labs (depends on the number of labs per department). We estimate that Nalanda and Vikramshila will require 10 additional workers each. Hence, according to our rough estimation, we need around $20 \times 3 + 10 + 10 = 80$ extra mess workers. Here we assume that our model deals with 20 departments, Nalanda and Vikramshila.

3. **Health Workers:** We also plan for a random 1000 RT PCR test per week, and for this, we expect that 7 medical workers will be needed for collecting around 200 samples each day for five days a week. By this calculation, every student will get randomly tested once per semester. Symptomatic patients will also be tested apart from random testing. For this estimate, we require 3-4 extra health workers.
4. **Watchmen:** We estimate that we require 4 watchmen per hall to monitor the students under quarantine/isolation as per Task 18. Hence according to our rough estimation, we need around $10 \times 4 = 80$ extra watchmen. Here we assume that our model deals with 20 Halls of residence.
5. **Cycle repair workers:** Lots of cycles have to be repaired as they have not been used for the past one year. We estimate that we require 4 extra cycle-repair workers per hall. Here we assume that our model deals with 20 Halls of residence.

Cost estimation and their source of hire

Type of workers	Quantity	Expected wages	Source
Mess workers	80	₹400-₹450 (per day)	Local contractors
Sanitization staff (for Labs)	80	₹400-₹450 (per day)	Local contractors
Health workers (for random testing)	11	Will be borne by the government	Government health workers from Hospital and nursing homes.
Watchmen	80	₹400-₹450 (per day)	Local contractors
Cycle repair workers	80	₹400-₹450 (per day)	Local contractors

Estimated Total cost estimation per week for extra staff

$$= 80 \times 450 \times 7 + 80 \times 450 \times 7 + 80 \times 450 \times 7 + 80 \times 450 \times 7$$

$$= \text{Rs. } 10,08,000 \text{ per week}$$

Note:

1. The wages of Rs. 400-450 is for unskilled labour working for a period of 8 hours/day.
 2. Extra hours in addition to this have to be paid proportionately.
 3. The wages mentioned are the current market rates of Kharagpur.
- 3. Assuming the Institute has a limited budget and may not be able to incur all these additional expenses (estimated by you in the above 2 questions). Tell other ways to finance the same (like loans from banks) and how will KGP pay it back? Like a charge on students over some years or grants from alumni or in what ways?**

REQUIRED AMOUNT: About 13,00,00,000INR per year (13 Crore INR)

Administration fund:

Administration can contribute to the COVID-relief fund in the following ways

- 1) Initially, loans can be procured from bands that can be repaid by
 - a) **Restricted hiring:** There can be a notch in new hires during the academic session 2021-22. This can be a good move to save funds from the administration. And, this amount can be used to repay loans.
 - b) **Restricted travel:** Generally, there can be laid restrictions on travel fund waiver from the institute. For 1-2 years, the Institute can stop funding the travel expenses of students and staff(teaching and non-teaching). The amount saved can be used to pay the loan instalments.

Amount Estimated through this channel:

- a) Through Restricted Hiring, we can estimate a minimum restriction of 20-25 employees(including professors, lab technicians and teaching assistants) per year with a median salary of 45,000 INR.
 - i) Amount saved per month: 8,00,000 - 10,00,000 INR
 - ii) Amount saved per year: 96,00,000 - 1,20,00,000 INR
- b) **Estimated Administration funding per year: 1,00,00,000 - 1,25,00,000 INR**

Alumni fund:

Alumni can be pitched to fund the sanitization expenses of their hall of residence and department.

- 1) A nameplate can be arranged at Halls of Residence and Department building having the names of the Alumni, who have donated greater than 3,00,000 INR.
- 2) They can be provided with an 80G certificate on donation which can help them in tax deduction.

Amount Estimated through this channel:

- 1) A breakup can be as follows:
 - a) Halls of Residence:
21 halls of residence * a median estimate of minimum 3 alumni fund from each hall = $21 \times 3 \times 3,00,000$ INR = 1,89,00,000 INR
 - b) Departments and Schools:
27 * a median estimate of minimum 3 alumni fund from each department/school = $27 \times 3 \times 3,00,000$ INR = 2,43,00,000 INR
- 2) **Estimated Alumni Fund per year: 4,32,00,000 INR**

Student fund:

Students can be encouraged to contribute to the COVID-relief fund

- 1) During the fee payment of Spring-2022, an extra charge of Rs. 250 per month, i.e., 1500 Rs for 6 months can be paid by the students along with the semester fee.
- 2) A Donation tab can be introduced on ERP through which students can donate more if they wish to.

Amount Estimated through this channel:

- 1) 13,027 students * 3000INR per student = 3,90,81,000 INR
- 2) **Estimated Student Fund per year: 3,90,81,000 INR**

Faculty and Staff fund:

Faculty and Permanent Staff can contribute to the financing post COVID-19

- 1) Faculty and Permanent staff having a monthly salary greater than 45000 INR, should contribute their one-day salary to the COVID-relief fund.
- 2) This can be done for three months, collecting one day's salary per month.

Amount Estimated through this channel:

- 1) Total Faculty Strength: 1,134
- 2) Estimated Median One-day Salary of Faculty: 2500 INR
- 3) **Estimated Faculty Fund per year:** $1134 * 3 * 2500 = 85,00,500 \text{ INR}$

Gymkhana Fund:

Part of Gymkhana funds can be used for COVID-relief activities

- 1) **Student Gymkhana fund:** Since every student pays 600 rupees per semester towards the Gymkhana fund, a part of this can be used for renovation activities. The amount saved by the ban of physical competitions and events be directed towards COVID-relief funds.
- 2) **Players-fitness Expenditure:** The amount allocated for the nutrition and fitness of players, and out of college events' budget can be used for COVID-relief.
- 3) **Fests and Events:** Social and Cultural fest, Techno-management fest, and other major events can be suspended for the academic year 2021-22. Gymkhana funds for these events can be used for post-COVID renovation activities related to playgrounds, stadiums, and other extracurricular spaces in the campus.
- 4) **Conferences:** Conferences and Guest Lectures can be restricted for a certain period of time. Remuneration, food and travel expenses allocated in the budget of the events can be used for COVID-relief activities.

Amount Estimated through this channel: 13,027 students * 300 INR(50% of the gymkhana fund paid by each student) = **39,08,100 INR per year**

Insurance fund:

Since the COVID-relief comes under the medical expenses of the student,

- 1) The medical expenses of every can be covered within their medical insurance amount.
- 2) This can be of huge benefit and reduces financial pressure through medical expenses on the administration.

Amount Estimated through this channel:

Estimated Median Insurance Coverage per each student: 2500 INR

13,027 students * 2500 INR = **3,25,67,500 INR per year**

Total Estimated fund through all these channels: 13,72,57,100 - 13,97,57,100 INR

ANNEXURE

(A) Guidelines to be followed by the students during the quarantine period on returning to campus:

1. All students returning to campus will have to undergo quarantine for a period of 14 days. Details about the rooms for quarantine is present in Task 18.
2. After the completion of the quarantine period, the students with no symptoms will then proceed to reside in their respective rooms in their respective hostels. Those tested positive/having flu-like symptoms will undergo treatment/isolation as per the detailed procedure mentioned in task 18.
3. All students must bring a clinical thermometer, a pulse oximeter, and 4-5 cloth masks, and 5-6 300 ml sanitizers. They must sanitize their hands frequently.
4. The students must always wear their masks when they are outside their rooms. If a student is found roaming without wearing a mask, he/she would be penalized and strict action would be taken against the student.
5. A student must not enter another student's room during the 14-days Quarantine period under any circumstances. If the need arises, he/she must contact the hostel administration first for permission. If one or more students are found in another student's room, strict disciplinary action should be taken against them.
6. The students are not allowed to meet other fellow students during the 14-day Quarantine. They are also advised to leave their rooms only when they have a genuine reason or work. Students are advised not to touch their hands on doors, windows, railings, etc. in public areas.
7. The students must ensure proper social distancing and hygiene while using the washrooms. They should not crowd the washrooms in the peak hours, instead, wait for their turn.
8. An instruction sheet that also contains the details of the personnel who can be contacted in the event of an emergency will be provided in each room. The students must immediately contact the concerned authorities if they experience any flu-like symptoms or health issues. The students are also advised to regularly monitor their body temperature and SP-O₂ levels.

(B) Details of the subjects under the proposed curriculum change for students not opting for department change:

Subject No.	Subject Name	L-T-P	Cred its	Subject Type
Semester No-1/2 (C- Compulsory Subject, F- Floating Subject)				
	INTRODUCTION TO DEPARTMENT	2-0-0	2	C
CE13003	ENGINEERING DRAWING AND COMPUTER GRAPHICS	1-0-3	4	F
CS10003	PROGRAMMING AND DATA STRUCTURES	3-0-0	3	C
CS19003	PROGRAMMING AND DATA STRUCTURES LABORATORY	0-0-3	2	C
CY11003	CHEMISTRY	3-1-0	4	F
CY19003	CHEMISTRY LABORATORY	0-0-3	2	F
	DEPARTMENT DIY PROJECT	0-0-3	2	C
EA10007	EXTRA ACADEMIC ACTIVITY-I	0-0-3	0	C
EA10008	EXTRA ACADEMIC ACTIVITY-II	0-0-3	0	C
EE11003	ELECTRICAL TECHNOLOGY	3-1-0	4	F
EE19001	ELECTRICAL TECHNOLOGY LABORATORY	0-0-3	2	F
HS13003	ENGLISH FOR COMMUNICATION	2-0-2	3	C
MA11003	ADVANCED CALCULUS	3-1-0	4	C
MA11004	LINEAR ALGEBRA, NUMERICAL AND COMPLEX ANALYSIS	3-1-0	4	C
ME11003	BASIC ENGINEERING MECHANICS	3-1-0	4	F
ME19001	INTRODUCTION TO MANUFACTURING PROCESSES	0-0-3	2	F
PH11003	PHYSICS OF WAVES	3-1-0	4	F
PH19003	PHYSICS LABORATORY	0-0-3	2	F
	HSS BREADTH COURSE	3-1-0	4	F