Parliamentary Questions (2020-2021)
(For the period from 15.10.2020 to 31.03.2021)

1. TOP Urgent: LOK SABHA SECRETARIAT QUESTIONS

Question	Answer
Kindly advise is there any fee waiver schemes for ST students in your institutes. If so, details thereof?	1) All ST students in the UG program get Full Tuition fee waiver. **Details Attached as annexure.** 2) At IIT Hyderabad all PG and PhD students of ST category are exempted from payment of Tuition fee. (The same is Suo motto declared at IIT Hyderabad website under fee structure and the same is available at the following link. https://iith.ac.in/academics/fee-structure/)
What are the specific concessions provided to ST students while taking admission in graduate and post graduate professional courses like MBA, BBA, BALLB etc.? If not, reasons therefore.	Not Applicable

2. Rajya Sabha Starred Question No. 41 to be replied on 04.02.2021 regarding Backlog Vacancies in Ministry / Departments

   Reply: Please refer **Annexure-1**

3. Lok Sabha Unstarred Question No. 1058 for 08/02/2021 regarding Ph.D. Programme asked by Shri S. Venkatesan
   Reply: Please refer **Annexure-2**

4. Rajya Sabha Unstarred Admitted Question No. U1494 for 11.02.2021 regarding "Use of Block Chain Technology for Issuing Certificates"
   (a) whether Government has started issuing graduation / Degree certificates using block chain technology.

   Reply: No

   (b) if so, the details thereof.

   Reply: NA

   (c) whether Government is of the view that these technologies can address the fake certificate issue that hamper the quality of the education; and
   (d) if so, the details thereof?

Reply: Yes, Block chain technology can address the fake certificate issue that hampers the quality of the education. Block chain technology is inherently tamper-proof. So, the contents stored in a block chain cannot be easily modified. As a result, this can be potentially used for storing the certificates while maintaining their authenticity. But there are some costs for sustaining the block chain technology which should be carefully studied.

5. Rajya Sabha Unstarred Question No. 1221 for answer on 11.02.2021 regarding Vacant Posts under Ministries
   Reply: Please refer **Annexure-3**

6. Lok Sabha Unstarred Diary No. 6997: Answer Date: 08/03/2021 regarding PhD Programmes in I ITs
   Reply: Please refer **Annexure-4** (both pdf & excel Sheet)

7. LSQ No. 2282 on 08.03.2021 regarding Number of Engineering Graduates.

   Reply: Please refer **Annexure-5**

8. Question raised by Parliamentary Standing Committee for IITs
   Reply: Please refer **Annexure-6**

9. Details required by Parliamentary standing committee
   Reply: Please refer **Annexure-7**

10. Rajya Sabha Provisionally Admitted Starred / Unstarred Dairy No. U2396 for answer on 18.03.2021 regarding "Equal Opportunity Cells in IITs"

   (a) whether the Ministry has issued any direction/guidelines for constituting SC/ST/OBC Cells or Equal Opportunity Cells in the IITs, if so, the details thereof.

   Reply: The Ministry of Education may like to reply.

   (b) whether any IITs have set up SC/ST/OBC Cells or Equal Opportunity Cells in their campus, if so, that details thereof and if not, the reasons therefor; and

   Reply: IIT Hyderabad has SC/ST Cell and Liaison Officers for SC/ST and OBC. The details of Cells are as follows:
   1. Chairman and Liaison Officer SC/ST Cell: Prof. C. Krishna Mohan, Dept of CSE, IIT Hyderabad, Email id: ckm@cse.iith.ac.in
   2. Liaison Officer OBC: Dr Narasimha Mangoade, Associate Professor, Dept. of Chemical Engineering, IIT Hyderabad, Email ID: narasimha@che.iith.ac.in

   Members of SC/ST Cell:
   1.Prof. Bharath Bhushan Panerai, Dept of MSME, IIT Hyderabad.
   2. Dr K.P. Prabhases, Dept of Liberal Arts, IIT Hyderabad
   3. Mr. S. Laxman, Assistant Registrar, IIT Hyderabad
   4. Ms. N. Aruna Jr. Assistant, IIT Hyderabad.

(c) whether any of the IITs have set up the Special Academic Support Programs to help with the academic deficiencies of their students especially for SC, ST and OBC Students, if so, the details therefor?

Reply:

1. The following are the academic support programmes in place at IIT Hyderabad with special emphasis for SC/ST Students:

On the Academic Front: -

- Every incoming batch is assigned with a faculty advisor to help them with academic matters till they graduate.
- The institute has an empathetic approach to students who are unable to keep pace with the academic rigor, either due to medical or other compelling reasons. The Senate of the institute has approved a slow-paced pursuance of the B.Tech. programme for such students. In fact, if the student so wishes he/she can obtain a semester break and continue pursuing the program after the break.
- The institute has in place an early intervention committee consisting of faculty members from various departments, which guides the slow movers and helps them to enhance their academic performance by periodic reviews.
- The institute offers multiple alternatives to students with backlogs - like supplementary examinations, equivalent courses, summer courses, to help them clear and move ahead with their batch mates.
- The Senate took note of the fact that a student may have to drop a semester due to situations beyond his/her control, for instance due to some medical emergencies or personal issues. Hence in a considered and an empathetic view, the Senate has decided that in the final grade card, the courses taken by the student will be listed continuously without any reference to the semester in which they were done.
- The institute has a first of its kind teaching assistantship at the B.Tech. level, where B.Tech. students can volunteer to be teaching assistants for the institute wide courses. This gives an opportunity for all students, from the 2nd year onwards, to take on a more academic mentorship role to their juniors. This scheme has been extremely successful and is a win-win situation for both the TAs and the instructors.

Financial Assistance:

All SC/ST/OBC students are entitled for following financial benefits by IITH:

- Full Tuition Fee Exemption for SC/ST Students. OBC students Tuition fee is reimbursed as per their parental Income
- At Institute level all eligible SC/ST students of B. Tech/B. Des/M.Sc. and MA may apply for Institute SC/ST Scholarships and the reimbursement components under this scheme:
    - Entitled for Refund of Licence Fee and Dining charges
    - Entitled for Pocket money of Rs.250 PM
- At institute level all eligible OBC students of BTech/B Des/MSc. and MA may apply for institute Merit Cum Means Scholarships and the reimbursement component under this scheme:
    - Entitled for Pocket Money of Rs.1000/- PM

11. Rajya Sabha Provisionally Admitted Starred / Unstarred Dairy No. U4075 for answer on 18.03.2021 regarding "Reservation norms in IITs

(a) the details of the applicability of existing reservation norms in Ph.D. and postgraduate programme admissions in IITs through seats which are not funded by Government sources, like research project staff, sponsored, self-financed, external, and part-time researchers;

Reply: At IIT Hyderabad, the reservation norms of Government of India are being followed for all Government funded programmes. However, for other funding such as Project, Self-financed, external and part-time research programmes the existing reservation norms are not applicable.

(b) whether cut-off marks for SC/ST/OBC/EWS categories, decided by the various departments of IITs, for selection to their research programmes are regulated by any directives issued by Government/courts; and

Reply : The cut off marks for OBC is being followed as per the MoE order No.F.No.1-1/2008-(III)-U-1(A) *Dt.17.10.2008*.

(c) the details on how cut-offs are decided for each social category?

Reply: At IIT Hyderabad the cut-off is decided as mentioned below:

- General Merit is fixed first. Out of this, 10% relaxation (reduction in %) is provided for OBC and 15% relaxation is being given for SC/ST candidates.
- As EWS is not at par with social backward categories, no relaxation is provided in cut-off.

12. Rajya Sabha Provisionally Admitted Starred / Unstarred Dairy No. U3285 for answer on 18.03.2021 regarding "Reservation status in IIT, Bombay

(a) whether none of the 26 departments in IIT Bombay managed to fill seats reserved for Scheduled Tribe students in PhD programmes between 2015 and 2019.
Reply: NOT APPLICABLE.

(b) if so, the details thereof quota-wise seats reserved/filled up/kept vacant, course-wise, and IIT-wise and department-wise also and reasons therefor: and
Reply: The attached excel sheet **(Annexure)** may kindly be referred.

(c) corrective steps being taken in this regard?
Reply:

Admission Process twice a year: We conduct the admission process twice a year July & January for PhD & MTech to ensure all seats which have been left vacant in July session get filled in January session.

Open Day: IITH organizes open day sessions every year for underprivileged and marginalized school students belonging to nearby villages to ensure the awareness of various courses offered by IITH, Science & Technology, Infrastructure etc. Further the visiting students also gain a unique perspective of science and technology by interacting in the Q&A session and voluntarily

participating in live experiments. Even during Covid pandemic, IITH has conducted an online awareness session for B Tech aspirants - Online Open House for the BTech aspirants 2020.

Centralized admission process: We have Centralized Admission platforms /bodies like JOSSA for BTech, UCEED for B Des JAM for MSc & COEP for MTech programs to ensure smooth & fair admission process across the nation and ensure that seats are not left vacant.

13. Rajya Sabha Provisionally Admitted Question Dy.no U2385 and U2384 for 18.03.2021 regarding Suicide cases of student at national institutes

    Reply: Please refer **Annexure-8**

14. Admitted Lok Sabha Unstarred Question No 3210 for 15.03.2021 regarding "Use of Artificial Int elligence for Education Transformation"

    (a) Whether the Government proposes to inculcate Artificial Intelligence (AI) for better educational transformation at secondary and higher secondary level.
    (b) if so, the details thereof.

    Reply to (a) & (b): Ministry may like to reply.

    (c) the manner in which AI is likely to affect the overall capabilities of the education sector.

    Reply:

    AI can be significantly useful in:
    (i) creation/support of educational content; (ii) personalized content delivery.
    (iii) translation of content into regional languages.
    (iv) automatic evaluation for large-scale training and evaluation.
    (v) automating tasks in education ERP, course enrolments.
    (vi) screening candidate profiles holistically for admission into programs in the country; and many more.

    (d) the steps taken by the Government to impart awareness of Artificial Intelligence and its application in higher educational institutions like IITs in the country?

    Reply:

    IIT-Hyderabad has established a Department of Artificial Intelligence which offers BTech, MTech and PhD programs in AI. It started the first B Tech in Artificial Intelligence program in India. Besides, IIT-H also offers a Professional Program in AI and Emerging Technologies for any interested participants in the country, as well as a real-time online weekend-based MTech in Data Science for working professionals. AI is also offered as a Minor program option for students enrolled in other engineering disciplines in the BTech program. In addition, AI is offered as a course for all students across the institution, so students enrolled in any

program can be aware of the basics of AI - to apply in their own discipline. For more details, please see https://ai.iith.ac.in/.

15. Lok Sabha Unstarred Dairy No. 12326 for answer on 22.03.2021 regarding "Institute Development Plan"
    Reply: **Please refer Annexure-9**

16. Lok Sabha Unstarred Question Diary No. 3390 for answer on 25.03.2021 regarding representat ion of reserved category students in IITs
    (a) whether students from the Scheduled Caste (SC) and Scheduled Tribe (ST) communities have significantly poor representation and acceptance rate in PhD programmers at the Indian institute of Technology (IITs) in the country; and

Reply: Percentage of PhD students admitted year wise & category wise at IITH

Year	Gen	SC	ST	OBC	EWS	Total
2016-17	57.61	15.22	2.17	25.00	0.00	100.00
2017-18	57.27	10.00	2.73	30.00	0.00	100.00
2018-19	52.38	12.70	0.00	34.92	0.00	100.00
2019-20	48.94	6.38	6.38	36.17	2.13	100.00
2020-21	46.67	15.83	4.17	25.83	7.50	100.00

(b)   if so, the details thereof during the last five years and current year, course and category-wise and the reasons therefore along with corrective steps being taken in future?

Reply: The attached excel sheet may please be referred.
Corrective measures taken.
Admission Process twice a year: We conduct the admission process twice a year July & January for PhD & MTech to ensure all seats which have been left vacant in July session get filled in January session.

17. Inputs for Lok Sabha Question Dy. No. 14998 regarding 'Water Proofing Material' 'to be answered on 26/03/20201.

a)   whether it is true that IIT-Hyderabad has developed cheap waterproofing material from fly-ash.

Reply: Yes, we, at IIT- Hyderabad, have developed a method to create superhydrophobic (waterproof) fly-ash based powders using a cheap and scalable approach. The results were published in an international journal, Chemistry Select (Mahanta, Urvashi, Umrika Khandelwal, and Atul S. Deshpande. "Wetting Transition from Lotus Leaf to Rose Petal using Modified Fly Ash." *Chemistry Select* 4.27 (2019): 7936-7942. https://doi.org/10.1002/slct.201901535)

(b)   if so, details of the research and to what extent this helps in cheaper waterproofing solutions; and Reply: We have successfully prepared superhydrophobic fly-ash powders using fly-ash from various sources using stearic acid as a surface modifying agent. We are currently working on viable, robust, and durable coatings for water harvesting and waterproofing applications. based on our results, we assume that this process will be far

cheaper than currently available commercial products, however, we will be able to provide cost analysis only after completing the research on the development of coatings.

(c)   **the steps taken for commercially exploit this research.**
  Reply: Several small-scale industries as well as multi-national companies including Lafarge Holcim (Indian subsidiary, ACC cement) had shown interest, however, so far none of these enquiries have materialized into technology transfer.

18. Rajya Sabha Admitted Unstarred Question No. 3380 for answer on 25.03.2021 regarding "Vacant Faculty Posts Under SC/ST/OBC category in IITs" asked by Shri K.K. Rajesh

(a) whether large number of faculty posts under SC/ST/OBC reservation category are vacant in various IITs;
Reply: At IITs, based on a ratio of 10:1 student to faculty ratio, the total number of possible faculty posts is the only number that is known. No IIT can reach this ratio so far to the best of my knowledge.

(b) if so, the details of such vacant posts in each of the IITs; and
Reply: We do not have a cadre wise (level wise distribution) of the number of faculty in the IIT system out of the total number. IIT system like any other global university of repute is a flexible system in terms of faculty numbers.

(c) the reasons for not filling such vacancies.
Reply: In the absence of the above, fixing the positions for each category is not possible.

Annexure -1			
Indian Institute of Technology Hyderabad			
Proforma-I			
Category	No. of backlog reserved vacancies as on 31.12.2018	No. of backlog reserved vacancies filled up as on 31.12.2018	No. of unfilled backlog reserved vacancies as on 01.01.2019
1	2	3	4
SC	8	Nil	8
ST	4	Nil	4
OBC	17	Nil	17
Total	29	Nil	29
Proforma-II			
Category	No. of backlog reserved vacancies as on 31.12.2019	No. of backlog reserved vacancies filled up as on 31.12.2019	No. of unfilled backlog reserved vacancies as on 01.01.2020
1	2	3	4
SC	8	Nil	8
ST	4	Nil	4
OBC	17	Nil	17
Total	29	Nil	29
Proforma-III			
Category	No. of backlog reserved vacancies as on 31.12.2020	No. of backlog reserved vacancies filled up as on 30.12.2020	No. of unfilled backlog reserved vacancies as on 31.12.2020
1	**2**	**3**	**4**
SC	8	4	4[#]
ST	4	2+1*	1[#]
OBC	17	6+1*	10[#]
Total	29	14	15

All the above positions showed under column 2 are notified in NF-8 advertisement dated 22.01.2020

* Filled, the selected candidates will join shortly

The vacancies are advertised under NF8, for which the written tests were held and offer letters were issued recently.

Lok SabhaUnstarred Diary No. 3153 Answer Date 08.02.2021

S.No.	Name of the Institute	Name of the Department	No. of Ph.D Student Department Wise					Total
			GEN	SC	ST	OBC	EWS	
1	IIT Hyderabad	Artificial Intelligence	16	0	0	6	0	22
2	IIT Hyderabad	Biomedical Engineering	21	6	3	11	2	43
3	IIT Hyderabad	Biotechnology	6	2	0	8	2	18
4	IIT Hyderabad	Civil Engineering	11	7	0	11	1	30
5	IIT Hyderabad	Chemical Engineering	11	3	1	8	0	23
6	IIT Hyderabad	Computer Science & Engineering	17	0	0	3	0	20
7	IIT Hyderabad	Chemistry	12	5	0	14	3	34
8	IIT Hyderabad	Design	6	1	0	0	0	7
9	IIT Hyderabad	Electrical Engineering	27	3	0	9	2	41
10	IIT Hyderabad	Entrepreneurship & Management	3	0	0	0	0	3
11	IIT Hyderabad	Liberal Arts	16	2	0	0	0	18
12	IIT Hyderabad	Mathematics	15	0	0	0	0	15
13	IIT Hyderabad	Mechanical & Aerospace Engineering	12	3	1	9	2	27
14	IIT Hyderabad	Materials Science & Metallurgical Engineering	9	4	1	4	1	19
15	IIT Hyderabad	Physics	13	4	1	16	2	36
		Total	195	40	7	99	15	356

Note: The data provided is pertaining to all funding agencies (e.g. MoE, Industry Sponsored, Project Sponsored and other funding sources). We are strictly following the Reservation policy as per the GOI norms for the MoE funded intake.

Indian Institute of Technology Hyderabad

Faculty Strength for the year 2017-18 (As on 31.03.2018)

Name of the Post	Grade	Total number of Sanctioned posts as on date	Post filled												Post vacant							Temporary			Remarks
			General		SC		ST		OBC		EWS		Total		General	SC	ST	OBC	EWS		Total	Visiting	Adjunct	Contract	
			Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female					Male	Female					
Assistant Professor		237 Based on student strength	72	13	2	0	1	0	9	1	0	0	84	14	Total Vacant 62 As there is no separate santion for Assistant, Associate & Professor. This figure can not be given category wise.							0	1	0	
Associate Professor			48	3	3	1	0	0	11	2	0	0	62	6								0	0	0	
Professor			9	0	0	0	0	0	0	0	0	0	9	0								0	3	0	

Indian Institute of Technology Hyderabad

Faculty Strength for the year 2018-19 (As on 31.03.2019)

Name of the Post	Grade	Total number of Sanctioned posts as on date	Post filled													Post vacant							Temporary			Remarks
			General		SC		ST		OBC		EWS		Total		General	SC	ST	OBC	EWS		Total	Visiting	Adjunct	Contract	
			Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female					Male	Female					
Assistant Professor		257 Based on student strength	68	14	2	0	1	0	7	0	0	0	79	14	Total Vacant 59 As there is no separate santion for Assistant, Associate & Professor. This figure can not be given category wise.							0	1	0	
Associate Professor			58	6	3	1	1	0	14	3	0	0	76	10								0	0	0	
Professor			16	1	1	0	0	0	1	0	0	0	18	1								0	4	0	

Indian Institute of Technology Hyderabad

Faculty Strength for the year 2019-20 (As on 31.03.2020)

Name of the Post	Grade	Total number of Sanctioned posts as on date	Post filled													Post vacant							Temporary			Remarks
			General		SC		ST		OBC		EWS		Total			General	SC	ST	OBC	EWS		Total	Visiting	Adjunct	Contract	
		285 Based on student strength	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female						Male	Female					
Assistant Professor			71	13	2	0	0	0	9	0	0	0	82	13		Total Vacant 66							1	1	0	
Associate Professor			60	10	3	1	1	0	13	2	0	0	77	13		As there is no separate santion for Assistant, Associate & Professor. This figure can not be given category wise.							0	0	1	
Professor			27	2	1	0	0	0	3	1	0	0	31	3									0	4	0	

Indian Institute of Technology Hyderabad
Faculty Strength for the year 2020-21 (As on 31.03.2021)

Name of the Post	Grade	Total number of Sanctioned posts as on date	Post filled													Post vacant							Temporary			Remarks
			General		SC		ST		OBC		EWS		Total		General	SC	ST	OBC	EWS		Total		Visiting	Adjunct	Contract	
		337 Based on student strength	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female					Male	Female						
Assistant Professor			78	13	2	0	0	0	11	0	0	0	91	13	Total Vacant 101								1	1	0	
Associate Professor			58	10	2	1	1	0	13	2	0	0	74	13	As there is no separate santion for Assistant, Associate &								0	0	1	
Professor			36	2	2	0	0	0	4	1	0	0	42	3	Professor. This figure can not be given category wise.								0	4	0	

भारतीय प्रौद्योगिकी संस्थान हैदराबाद
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Indian Institute of Technology Hyderabad
Kandi -502285, Sangareddy, Telangana, India
Phone: (040) 2301 6033; Fax: (040) 2301 6003/32

F. No. 1-1/IITH/COORD/2020-21   **Dated. 1st March, 2021**

To
Shri. P.J. Soundararajan,
Under Secretary (IITs),
Department of Higher Education,
Ministry of Education,
Government of India

Sub: Lok Sabha Provisionally Admitted Diary No. 6997 regarding "Ph.D. Programmes in IITs"

Sir,

With reference to the MoE's email dated. 25.02.2021 on the subject cited above, the point wise reply pertaining to IIT Hyderabad is provided as detailed below:

(a) Whether the Government aware of a recent report in the media that students from SC/ST communities faced a lower acceptance rate into PhD programmes at the Indian Institute of Technology (IITs);

(b) If so, the Government response to the same including reasons for such an occurrence;
   Reply for (a) & (b): MoE may like to reply.

(c) The year wise data of the number of applicants from General, SC, ST, OBC categories to PhD programmes at each of the IITs and the number of applicants accepted, during the last five years;

(d) The number of vacant reserved PhD seats for each category at the IITs, during the last five years?
   Reply for (c) & (d): Please see the excel file attached with the email.

This is for your kind information.

Your sincerely,

(Cmde. Manohar Nambiar (Retd.))
Registrar, IITH

Indian Institute of Technology Hyderabad

Lok Sabha Unstarred Diary No. 6997 Amswer Date : - 08.03.2021

S.No.	Name of the IITs	Academic Year	No. of application received in Ph.D				Total	No. of application accepted in Ph.D #				Total	No of Vacant Ph.D Seats				Total
			General *	SC	ST	OBC		General *	SC	ST	OBC		General *	SC	ST	OBC	
11	IIT Hyderabad	2015-16	2049	494	96	1083	3722	37	9	1	24	71	0	0	0	0	0
		2016-17	2234	544	119	1085	3982	53	14	2	23	92	0	0	0	0	0
		2017-18	2479	621	132	1305	4537	63	11	3	33	110	0	0	0	0	0
		2018-19	2647	607	121	1464	4839	33	8	0	22	63	0	0	0	0	0
		2019-20	2080	474	121	1187	3862	24	3	3	17	47	4	5	2	0	11
		2020-21	4463	967	252	2526	8208	65	19	5	31	120	4	3	5	4	16

* "General" includes "General" and "General-EWS"

Number of MHRD funding students admitted

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F. No. 1-1/IITH/COORD/2020-21   **Dated. 3ʳᵈ March, 2021**

To
Shri. P.J. Soundararajan,
Under Secretary (IITs),
Department of Higher Education,
Ministry of Education,
Government of India

Sub: Lok Sabha Admitted Question No. 2282 regarding "Number of Engineering Graduates" –
Reg.

Sir,

      With reference to the MoE's email dated. 03.03.2021 on the subject cited above, the point wise reply pertaining to IIT Hyderabad is provided as detailed below:

(a) The number of Engineering Graduates who have graduated from various Government and private Engineering Colleges and Institutes in the country during the last three years;

Year	2018	2019	2020
No. of B. Tech Graduates	208	200	231
No. of M. Tech Graduates	217	177	190
No. of PhD Graduates	38	52	68

(b) The percentage of Engineering graduates who secured jobs in the field of engineering from their college campus recruitment procedures?

Academic Year	2017-18	2018-19	2019-20
% of Eng. Graduates Placed	60.45%	78.65%	76.60%

This is for your kind information.

Your sincerely,
Sd/-
(Cmde. Manohar Nambiar(Retd.))
Registrar, IITH

Annexure - 6				
Name of Startup	Type of Innovation	Type of Technology	Incubator at HEI supporting the innovation	Details of team developing the Innovation/Product
Restyro technologies Pvt. Ltd	Product innovation	Advanced Materials (polymers)	i-TIC Foundation	Dr. C. S. Sharma, Dr. Mudrika Khandelwal Aggarwal
PuREnergy Pvt. Ltd.	Product innovation	Clean Energy (EV)	i-TIC Foundation	Dr. Nishanth Dongari,
Lemon Flip Solutions Pvt Ltd.	Product innovation	Chip Design	i-TIC Foundation	Dr. Asudeb Dutta, Sobhan Babu Chintatalli, Shiv Govind Singh
SKIoT Technologies Pvt. Ltd.	Product innovation	IoT Technology	i-TIC Foundation	Malyala Sai Kiran Kumar, Akshay Ramesh Jadhav
WISIG	Product innovation	5G - Wireless Technology	i-TIC Foundation	Dr. Kiran Kuchi,
SenseHealth Technologies Pvt. Ltd.	Product innovation	Healthcare, (EKG)	i-TIC Foundation	Dr. Amit Acharyya, Asudeb dutta, Bhudeb Chakravarti
Osure Care Pvt. Ltd.	Product innovation	Healthcare (Mass Spectrometer based)	i-TIC Foundation	Ms. Vandana Sharma,
Acausal Automation Pvt. Ltd.	Product innovation	Robotics	i-TIC Foundation	Dr. R. Prasanth Kumar,
Skelregen Pvt. Ltd.	Product innovation	Healthcare (3 D printed bone graft)	i-TIC Foundation	Nellore Vijay Kumar, Dr. Subha Narayan Rath, Mr. Shibu Chameettachal
EaffoCare Innovation Pvt. Ltd.	Product innovation	Healthcare, (Periodontal)	i-TIC Foundation	Dr. Jyotsnendu Giri, Baishakhi Chandra
CrystalBall/ CBAI	Product innovation	Drone Technology (Agriculture)	i-TIC Foundation	B.Sai Raj, Vidya Sagar
Anvation Labs (iDEX)	Product innovation	Defence (Embedded Systems)	i-TIC Foundation	Niraj Mahapatro,

Indian Institute of Technology Hyderabad

Year	Total no of students graduated (UG)	Out of Column (A), number of students opted for M. Tech	Out of Column (A), number of students opted for foreign studies	Out of Column (A), number of students opted for Start-ups
	(A)	(B)*	©	(D)
2017-18	208	4	1	0
2018-19	200	11	4	2
2019-20	231	9	2	0

*Converted to M.Tech at IITH under dual Degree program

Indian Institute of Technology Hyderabad

Student Suicide Last 5 Years & Current Year (Semester-Wise)

S.No.	Name of the IITs	Batch	Details of the Suicide in the last 5 years and Current year (Semester-wise)	Remarks
12	IIT Hyderabad	2019	3 Students Committed Suicide.The Details are as follows: 1. M.ANIRUDHYA,BTech - MAE 2. MARK ANDREW CHARLES,Masters - MDES 3.SIDDHARTH PICHIKALA,BTech - CS	
		2020	Nil	
		2021 (As on 28.02.2021)	Nil	

भारतीय प्रौद्योगिकी संस्थान हैदराबाद
कंदी-502 285, संगारेड्डी, तेलंगाना, भारत
फोन: (040) 2301 6033; फैक्स: (040) 2301 6003/32
Indian Institute of Technology Hyderabad
Kandi -502285, Sangareddy, Telangana, India
Phone: (040) 2301 6033; Fax: (040) 2301 6003/32

F. No. 1-1/IITH/COORD/2020-21   **Dated. 19th March, 2021**

To
Shri. P.J. Soundararajan,
Under Secretary (IITs),
Department of Higher Education,
Ministry of Education,
Government of India

Sub: The Lok Sabha Unstarred Question Dairy No. 12326 admitted as " Lok Sabha Unstarred Question No. 4195 regarding "Institute Development Plan"– Reg.

Sir,

       With reference to the MoE's email dated. 15.03.2021 on the subject cited above, the point wise reply pertaining to IIT Hyderabad is provided as detailed below:

(a) whether the Government has asked the IITs to develop Institute Development Plan to envisioned in NEP 2020.
Reply: The Ministry may like to reply.

(b) if so, the details thereof
Reply: The Ministry may like to reply.

(c) whether the mobility of faculty members and industry experts between technical institute and industry will promote collaborations between technical institute and industry will promote collaborations between industry and academia and if so, the details thereof.

Reply: Yes, mobility of faculty members and industry experts between IITH and industry will promote collaborations between IITH/academia and industry. IIT Hyderabad has i-TIC Foundation and Technology Business Incubation Centre for promotion of collaboration between industry experts and faculty of IIT Hyderabad. It is also evidenced that mobility of industry experts and faculty members of IIT Hyderabad foster the growth of incubations and academic research.

(d) whether the Government proposes to constitute a taskforce to review use of technology at all IITs and also to accelerate deployment of digital tools in the country and if so, the details thereof;and

Reply: The Ministry may like to reply.

(e) the details of the contribution of the academics during the challenging times of COVID-19 and for their contribution in combating the COVID-19 by new scientific research?

Reply: IIT Hyderabad has dedicated an entire issue of newsletter Combating COVID-19 @IITH (किरIITH, 2nd Edition) to describe about the research undertaken to combat at IITH. The newsletter may be accessed using the hyperlink:
https://pcr.iith.ac.in/files/reports/newsletter/Kiriith-Issue-2.pdf

Few research initiatives undertaken by the IITH, among other things, to combat COVID-19 are mentioned as detailed below:

I. Sanitizers:

1. Prof. Zafar Ali Khan (EE dept.) is working on EM based sanitizer (including UV-C Sanitizers).

II. Masks, Face shields & Protective wear:

2. Pure EV, under the leadership of Dr. Nishanth Dongari (MAE dept.), is working on to bring out a face shield in large quantity in collaboration with RCI Hyderabad.
3. Dr. Renu John (BME dept.), Dr. Suryakumar (MAE dept.) and their team are working on Design and production deployment of reusable face masks. These PPE face masks, which provide better protection than cloth masks are autoclavable and can be reused by changing the filter.
4. One of the incubates of CfHE, Dr. Sai Laxman under the mentorship of Dr. Renu John (BME dept.) has come up with a full design of PPE (protective gear, and face shield), "USafe - Sterilisable Face Shield & Protective Gown", designed, tested and prototyped.
5. Dr. Jyotsnendu Giri (BME dept.) and EaffoCare Innovation developing Antiviral coating for PPE and common surface.
6. The fellows of CfHE are working on an isolation hood for COVID-19 positive patients where healthcare providers can go near without fear and do procedures like intubations and inoculations.

III. Ventilators and other Hardware:

7. Aerobiosys, a startup of Centre for Health Care Entrepreneurship (CfHE) at IITH, has developed a low-cost portable ventilator, Jeevan Lite.
8. Prof. R. Prashant Kumar and his student Mangesh Ratolikar (MAE dept.) have developed a remotely operated mobile robot for hospitals and isolation wards for the

purpose of interacting with patients or persons in quarantine, distributing food or medicines, and collecting trash. Dr. Harish Dixit (MAE dept.) is working on developing flow sensors for the ventilator system.

9. Dr. Nishanth Dongari (MAE dept.) is developing DC motors for ventilators.
10. Dr. Nishanth Dongari (MAE dept.) is developing Lithium batteries for thermal scanners and medical equipment.
11. Dr. Amit Acharyya & Dr. Ashudeb Dutta (EE dept.) and their team through their startup "Sensehealth" at iTIC IITH, has developed "Low-Cost One-stop ECG Solution functional as (a). Ambulatory (inside ambulance), (b). Hospital, (c). at home (during isolation period) and as (d). Holter in COVID-19 pandemic."
12. Dr. Renu John (BME dept.) is working through CfHE at IITH on efficient pulmonary rehabilitation system for post ventilator patients for efficient prognosis and a low-cost lab on a chip for detection of COVID-19 virus with fast turn over results.

IV. Drugs & Vaccines:

13. Dr. Ashudeb Dutta, Dr. Soumya Jana and Dr. Shiv Govind Singh (EE dept.) are developing a smart wearable patch for the prevention of quick spread COVID-19 pandemic.
14. Dr. Ranjith (MSME dept.) & Dr. Aravind Rengan (BME dept.) have filed a patent on the technology and are in the process of submitting a manuscript.
15. Dr. Ashish Misra's Laboratory (BT dept.) is working on designing and developing DNA and mRNA-based vaccine candidates for SARS-CoV-2.
16. Dr. Ashish Misra's Laboratory (BT dept.) is also working on repurposing FDA approved drugs to block SARS-CoV-2 infection in humans.
17. Dr. Rajkumara (BT dept.) is working on in silico engineering of putative epitope peptides from proteins of SARS-CoV-2 on nanoparticles to develop vaccine candidates.
18. Dr. Mudrika Khandelwal (MSME dept.) and Ashish Misra (BT dept.) are developing Pulmonary delivery of antiviral herbal oils for adjuvant therapy.
19. Dr. Thenmalarchelvi (BT dept.) is identifying potential drug targets in the structural proteins of SARS-Cov-2.
20. Dr. Jyotsnendu Giri (BME) is working on a peptide-based vaccine for SARS-Cov-2.

V. Sensors/ Detection and Air Purifiers:

21. Dr. Shiv Govind Singh (EE dept.) is developing rapid, ultrasensitive biomolecule sensor for detecting coronavirus in individuals.
22. Nemocare and Heamac, two startups of CfHE, mentored by Dr. Renu John (BME dept.) are working on wearables for COVID-19 patient monitoring in isolation wards without having to go near to the patient unless there is an emergency. Nemocare Raksha is a wireless wearable for monitoring COVID-19 patients. This device is for COVID-19 patients in the ICU segment and home care segment. The device is ready to be manufactured on a large scale.

23. Dr. Ashudeb Dutta, Dr. Gajendranath Chowdhary and Dr. Soumya Jana (EE dept.) are developing an "A Handheld Contact-less Temperature Recording Device" for measuring the temperature for advanced fever screening in the COVID-19 pandemic.

24. Kvayat Medical, a start up from CfHE, under the mentorship of Dr. Renu John (BME dept.) has developed a product "Traqaro", which enables organised tracking and monitoring of COVID-19 patients with the help of a Bluetooth-based wearable.

25. Heamac Solutions, a start-up from CfHE, under the mentorship of Dr. Renu John (BME dept.) has developed A Tracker to diagnose & prevent COVID-19 spread with the help of a wrist band to detect symptoms of COVID-19 infection, screening & support.

26. Dr. Jyotsnendu Giri and Dr. Hari Krishnan (BME dept.) are working on rapid, affordable, portable SARS-Cov-2 screening kit.

27. Dr. Ch. Subrahmanyam (CHY dept.) and Dr. Shashidhar (CE dept.) are working on Air purifiers that can help residents, hospitals and malls to purify air contaminated with viruses.

28. Dr. Chandrasekhar (CHE dept.) and Dr. Anindya Roy (BT dept.) are developing a nano biosensor for rapid and early detection of SARS-CoV-2.

29. Dr. Lopamudra Giri and Dr. Suahanya (CHE Dept.) have started designing a 3D printed device that can be used for the detection of multiple proteins by using immunoassay for SARS-CoV-2 infection diagnosis and severity categorization.

30. Prof. Zafar Ali Khan (EE dept.) is working on Real-time detection of COVID-19.

VI. Apps and Software:

31. Dr. Harish Dixit (MAE dept.) is building a cough simulator to test the efficacy of masks and this work is being carried out based on discussions with colleagues at IIT Bombay, TIFR Mumbai and ICTS Bangalore.

32. Dr. Rajalakshmi (EE dept.) is working on IoT enabled remote monitoring of temperature and respiratory rate for COVID-19 infected patients.

33. Dr. Mohan Raghavan and Dr. Kousik Sarathy (BME dept.) have been working on Data analysis and modelling of COVID-19 disease spread.

34. Dr. Krishna Mohan (CSE dept) is leading a team to work on using visual surveillance to detect social distancing & people wearing masks.

35. Dr. Vineeth (AI dept.) and his team are working on AI to explain decisions on detecting Coivd-19 using chest X-ray.

36. Dr. Kishalay Mitra (CHE dept.) is working on deep learning based cost-effective and rapid prognosis of COVID-19 to aid the state-of-the-art PCR & serology-based diagnosis in India.

37. Dr. Kishalay Mitra and Lopamudra Giri (CHE dept.) are working on development of computational and visualization software for evaluating GPCR targeting drugs with the aim of mitigating coronavirus infection level.

38. Mr. Shubham Panchal (CS18BTECH11052), Mr. Rishik Ramena (CS18MTECH11018), Ms. Sneha Ghadiya (CS18MTECH11003) and Mr. Supreet Singh (CS16BTECH11038) developed and deployed a portal for helping Sangareddy distt administration in door delivery of essential items during lockdown (May/June 2020).

VII.   Other Areas:

39.   Dr. Digvijay Pawar and Dr. Pritha Chatterjee (CE dept.) are modelling the Impact of COVID-19 outbreak on the daily commute and vehicular emissions during the transition phase.
40.   Dr. Mahati and Dr. Haripriya (LA dept.) are working on exploring working mothers' experiences, regarding housework, childcare and professional work during the lockdown through regular interviews.
41.   Dr. Satya Prakash Singh (Maths Dept.) is working on A cost-effective approach to the design and analysis of multiple experimental groups: a useful methodology for comparing potential treatments for COVID-19.
42.   Dr. Shuhita Bhattacharjee (LA) is working on "Urban Patterns of Gendered 'Productivity,' Emotional Abuse, and Anxiety during COVID-19."
43.   Dr. Prabheesh (LA dept.) is working on the impact of COVID-19 on financial markets.
44.   Dr. Shiva Ji (Design Dept.) is working on "Design for the New World: Post COVID-19: A Disruptive Change in Context".
45.   Dr. Ambika (CE dept) is working on the Impact of COVID-19 on Environmental Sustainability.
46.   Dr. Sathya Peri and Dr. Vineeth have initiated work on Effective Framework for Managing supply and demand post lockdown using Federated Learning.
47.   Prof. Zafar Ali Khan (EE dept.) has developed a non-intrusive, passive method using LTE signals for monitoring Crowd size for detecting social distancing violations.
48.   Dr. Srikar A V R is working on "Touchless design solutions kit", "Readiness plan for re-entry into workplaces in compliance with WHO/CDC/Government norms", "Distributed working styles: Work-from anywhere solutions" and "Ergonomic/ Postural analysis while working from home".

VIII.   Publications on COVID-19 related topics:

49.   Dr. Surendra Nath, Seismic Noise Changes during COVID-19 pandemic: A case study of Shillong, India, Natural Hazards.
       Dr. Aalok Khandekar (LA Dept) is working as part of an international research project examining how COVID has complicated efforts aimed at managing effects of extreme heat among low-income residents in Hyderabad.
       Publication: Nausheen Anwar, Sulfikar Amir, Jamie Cross, Daniel Friedrich, Aalok Khandekar, Marie Morelle, Elspeth Oppermann and Anindrya Nastiti. "Heat and Covid in the Off-Grid City." Somatosphere. July 2, 2020.
       http://somatosphere.net/2020/heat-covid-off-grid.html/
50.   S. Sardar, A. K. Mishra and M. Z. A. Khan, "Crowd Size using CommSense Instrument for COVID-19 Echo Period," in IEEE Consumer Electronics Magazine, doi: 10.1109/MCE.2020.3032791.
51.   Dr. M. V. Panduranga Rao and Mr.Rajesh Kumar Pandey (CS15RESCH11008) have a relevant paper "Traveling Agents and Indirect Epidemic Transmission" in the 15th

Agent Based and Multi-Agent Systems: Technologies and Applications (KES-AMSTA-21) conference.

52. Dr. Kirti Sahu, Dr. Saravanan Balusamy and Dr. Sayak Banerjee estimated the lifetime of potentially covid containing droplets on various surfaces (like glass, paper or smartphone cover) at various humidities and temperature conditions with implications on sanitization frequency of public and home spaces.

Publication: "Lifetime of sessile saliva droplets in the context of SARS-CoV-2", Balusamy S., Banerjee S., Sahu K. C., International Communications in Heat and Mass Transfer 123 (2021) 105178.

The 4th Edition of IITH Newsletter (किरIITH) on Harbouring Healthcare @IITH also talks about the steps that can be taken to prevent the spread of COVID-19. The 4th Edition of किरIITH may be downloaded from the link provided below:

https://pcr.iith.ac.in/Kiriith-Issue-4,October,2020-Harbouring-Healthcare@IITH.pdf

Also, on the social front, IITH has supported local administration with PPEs and distribution of sanitizer. IITH has even ensured the safety of the surrounding villages which have been adopted under "Unnat Bharat Abhiyan" (UBA) by creating awareness on the malignant implication of COVID-19 spread and how to avoid its transmission.

This is for your kind information.

Yours sincerely,

(Cmde. Manohar Nambiar (Retd.))
Registrar, IIT Hyderabad.