



Indian Institute of Space Science and Technology (IIST) NEWSLETTER

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Director's Message



It gives me immense satisfaction in placing before you this issue of IIST Newsletter, covering the period January to June 2020. The year started with great promise and everyone was full of zeal to contribute toward further growth of the institute. The COVID-19 pandemic has brought in an upheaval and a set of challenges which some of us are facing for the first time in our life. The institute suspended classes and could also manage to send all the students safely to their homes after March 13, 2020. A week after, a series of national lockdowns were implemented. However, within two weeks, necessary facilities were organised to start online classes and before the end of the month of March learning resumed. The students and faculty of IIST deserve appreciation for such a quick migration to new way of teaching and learning. All stakeholders, disregarding the challenges they were facing, could also help in organizing oral examination and thesis evaluation for passing out B. Tech and M. Tech students. Under guidance of the academic council, a solution was found for providing results for continuing students with an option to these students to write an examination, if they were not satisfied with assigned grades and wished to improve them.

During this period, NIRF rankings 2020 were also released and the institute was placed at 35th position among the Engineering institutions. This accompanying scores also indicated that while improved scores were obtained by the institute in 4 out of 5 criteria, it needs to further enhance its research profile. This also brought home the rapid pace at which two of the institutes progressed to overtake IIST which was placed at 33 position last year.

I am sure that the students are eagerly waiting for conditions to improve so they could be physically present in the campus. Once they are back they would be happy to see completion of indoor facilities in Student Activity Centre, a greener and bluer campus with a landscaped central island and water conservation structure, respectively. In spite of current spell of heavy rain and pandemic, significant progress has been made in realization of an underpass which would be the main entry to the campus. In the meantime, stay safe with your family and enjoy reading this issue of newsletter.

Dr. Vinay Kumar Dadhwal
Director



Republic Day Celebrations >>>

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Republic Day Celebrations

IIST celebrated India's 71st Republic Day on Friday, 26 January 2020 with great eclat. Director, IIST hoisted the National Flag and spoke about various aspects of India becoming republic on 26th January 1950. In his speech he highlighted the achievements made by IIST academic community and new collaborations of IIST with other institutes and organisations. He gave an insight on the various accomplishments achieved by ISRO such as Chandrayaan 2, New Space India Limited (NSIL), announcement of third launch pad etc. He elaborated on successful launch of IIST's first space hardware, which was carried by PSLV -C45 and collected data for 2 months. A team which include 4 faculties from IIST has received Team award from ISRO. It reinforced the belief and confidence that IIST can offer better contributions for such projects in the coming years. He elaborated on future programmes of the institute in space science. He mentioned about the MoU that IIST signed with Caltech for ARREST. He also mentioned about the small steps IIST is taking for Ganganyaan.



Dr. V K Dadhwal, Director, IIST inspecting the guard of honour

Director briefed about the infrastructure development in the campus in terms of new buildings and labs. He talked about the progress made in academic activities, achievements and awards received by faculty and students and motivated the students for bringing more laurels for the institute through their accomplishments.

Awards were given to CISF personals. Director also honoured lab staff who worked for ARREST. He distributed prizes for winners of 7th edition of staff student cricket. Colourful cultural programmes by students, CISF and kids of IIST staff were organized and was followed by sweet distribution.

Conscientia 2020

The 2020 edition of Conscientia, IIST's technological and astronomy fest, was held for three days from 29th February to 2nd March 2020. This year's theme, titled '*Hack into the Future*', brought out the essential aspects of technology for tomorrow – including but not limited to innovation, adaptability, safety and reliability. Close to 400 people from other colleges took part in a multitude of events, with a few participants coming from places as far as Delhi. Conscientia's workshops, which have a long standing history of facilitating students to learn skills required for today's technological world, were conducted on interesting topics such

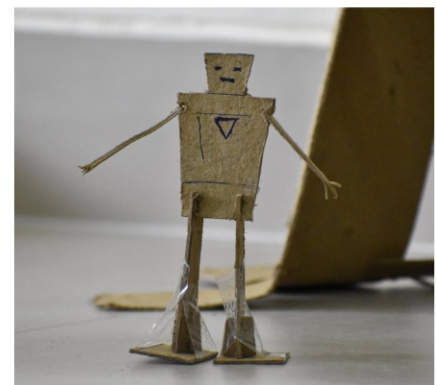
as Augmented reality, Robotics, Biomimicry etc.. It witnessed 200 curious minds at work, a significant majority of which were IIST's first year students. The Lecture Series were graced by the presence of influential dignitaries including the Director of Human Space Programme Dr. V R Lalithambika, who imparted invaluable points on technical leadership from her 30+ years' experience of working in ISRO. The Tech Expo displayed a myriad collection of innovation from various fields of engineering and notable among them include models of ISRO's latest SSLVs and their thrusting systems, a demonstration on holographic technology, IIST's



own exhibit on Nano-satellite fabrications and student projects. A very cute and groovy dancing robot named 'Nova' won many hearts while leaving the minds puzzled about its spectacular performance. Further, merciless *Robowars* proved to be the most engrossing event of the fest for spectators and participants alike. A total of 20+ robots battled for the title, breaking the silence of the late night with clanking metal and deafening cheer. The prestigious 3-Minute Project Thesis Presentation competition went on full swing, with participation from 35 teams. The Line Follower event glimpsed the unbreakable spirit of innovation and engineering amidst utter chaos, as teams worked tirelessly till the last minute to tinker their models and code. RC Car Racing and Amphibot too witnessed a large gathering of spectators awestruck by the engineering ingenuity of the participants. Finally, *Conscientia 2020* witnessed a power-packed end with a grand DJ Night where IISTians, students from other colleges and organisers alike, danced to the beats which gave them a well-deserved relaxation, after 3 days of brainstorming.



(Left to Right) Prof. Kuruville Joseph, Dr. V K Dadhwal, Shri. D. Sam Dayala Dev, Director, IISU (Chief Guest) and Prof. YVN Krishna Murthy



Conscientia's Techfest Actions...

International Women's Day Celebrations

The Indian Institute of Space Science and Technology (IIST) celebrated the International Women's Day on 10th March, 2020. Focusing on the theme 'An equal world is an enabled world', this year two eminent women from two distinct realms to kick start the celebrations. The 2020 International Women's Day gathering was welcomed by Prof. Nirmala Rachel James, Chairperson, Gender Sensitization Committee. The meeting was presided over by Dr. V K Dadhwal, Director, IIST. Ms. Aishwariya Dongre IPS (Assistant Commissioner of Police, Shanghumugham) was the Chief Guest. Being a young, energetic and vibrant police officer she exhorted the audience to pursue their dreams with determination. By narrating several anecdotes from her own life and career, she inspired the students, staff and teachers of the significance of being bold. She who announced that she did not believe in celebrating one particular day for women, asked the audience to stand up and speak for the individual's rights and protect them. She concluded her address by asking the audience to be aware of the existing laws and be cautious while interacting in the social spaces. The Guest of Honour, Ms. Khyrunnisa, writer and academican, enthralled the audience with her witty and engrossing talk. She narrated the history of the celebration of the women's day, and also drew special attention towards the significance of celebrating such days. She concluded her speech by exhorting the audience to celebrate every woman in their life. Dr. Y V N Krishna Murthy offered the felicitations by remembering those women who had inspired him, those women employees of the Department of Space who are serving in the Antarctic regions of the Southern Hemisphere. The meeting was officially concluded with vote of thanks delivered by Dr. Sheeba Rani J, Chairperson, Internal Complaints Committee.



Chief Guest Ms. Aishwarya Dongre, IPS delivering lecture

Though we planned to organize several cultural programmes and lectures, as Govt. of Kerala has declared a public health emergency and appealed to observe restraints in conducting public functions and gatherings, we organized the function in a formal manner without losing its real essence.



Dr. V K Dadhwal, Director, IIST, delivering presidential address

"SAMADHAN" for Covid-19 challenges

A team comprising of Dhruva Anantha Datta, Kundan Surse (4th semester BTech (ECE) students) and Dr. Immanuel Raja (Asst. Prof, Avionics) was shortlisted for the second round from over 700 teams in Track-2 (Validate-Pitch-Deploy) of **MHRD AICTE MEGA ONLINE CHALLENGE "SAMADHAN"** for Covid-19 challenges. The project was titled: "Li-Fi based Ultra-low Cost Wireless Connectivity Solution for Cable-free Vital Parameters Monitoring in Emergency Rooms".

Festivals celebrated at IIST

Lohri, 13th January 2020

Under the waning moon and the starry night sky, IIST celebrated Lohri on the thirteenth of January with the traditional bonfire and various cultural activities. Musical chair, Antakshari, dumb charades were some of the fun events that were held on the night. Soulful poetry and energetic instrumental duets along with melodious songs filled the air as talents both known and hidden took to the stage.



Pongal, 13th January 2020

Students and faculty of IIST, came together to celebrate the harvest festival of Pongal. The chakrapongal, a sweet dish made of jaggery and rice, was made using traditional earthen pots and firewood stoves by the students and was served to all those gathered. Fun games were organised on that day and the winners were awarded with sugar canes. The day's festivities ended with a heated pot breaking tournament.

Food Fest @ IIST, 5th February 2020



The Food Fest, organised on the 5th of February, was a tasty take on managing Conscientia's finances. Ridiculously delicious array of goodies were prepared by the students of IIST - ranging from appetizers like bhajjis and sandwiches to traditional dishes that reflect Kerala's customs. Also featured were refreshing juices, mouth-watering biriyani with raitha and magical chicken frankie that vanished in a jiffy. The event began at 4 in the afternoon and continued to impress its customers late into the evening till 7, urging a lot of stall owners to restock for meeting the demand among customers which included faculty and staff of IIST.

Holi, 9th March 2020

Holi and Duletti festivities were celebrated with usual fanfare which lasted for a night and full day at IIST. The gala started out with a fun filled evening of fun events and opec mic performances on the ninth of March. People sang and danced to their heart's content. The next day saw an explosion of colours, as holi celebrations had begun in its earnest. The entire IIST community, irrespective of seniority had come together to take part in the merriment. Adequate containers of water were placed at proper intervals to ensure proper sanitation. With music, dance and a whole lot of colors, Holi 2020, went down in memory of IIST students as a memorable day.



Sports @ IIST

IIST Cricket League (ICL) 2020

IIST saw its own version of cricket tournament in the form of ICL (IIST Cricket league) organised by students that involved all members of the institute community including the faculties. There were around 56 league matches spanning over six weeks culminating in an epic finale between the faculty team and a student team. With around 16 teams with players from all years including the master students and the Ph.D. scholars, this tournament was a big success and provided a much needed relief during quiz schedules.

Annual Sports Meet 2020

The annual sports meet for the academic year 2019-20 was held on 31st January (Friday) and 1st February (Saturday), 2020 at the Magudagiri ground (IIST Plot-2). This was the second time that IIST has conducted the sports meet in its home ground, which was inaugurated by the Director IIST on 15th February 2019. The sports event opened with 3000 meters for boys on January 25 and track and field events trials on January 31 afternoon. **Dr. G. Kishore**, Principal & Regional Director, SAI - LNCPE Thiruvananthapuram was the Chief Guest of the event. **Dr. V. K. Dadhwal**, Director, IIST presided over the function. **Prof. Kuruvilla Joseph**, Sr. Professor and Dean (Students Activities), IIST welcomed the gathering and **Dr. Y V N Krishna Murthy**, Sr Professor and Registrar, IIST felicitated the occasion. Flag of IIST was hoisted by the Director IIST, followed by lighting of torch by the chief guest and other dignitaries. After lighting of torch, **Dr. J Solomon Ivan**, Chairman, Sports Council, IIST requested chief guest to come on podium for saluting the march past of different houses. After that honorable chief guest addressed the gathering and declared annual sports meet 2019-20 open.



Director hoisting the sports flag



(Left to Right) Prof. YVN Krishna Murthy, Dr. V K Dadhwal, Dr. G Kishore (Chief Guest) and Prof. A.Chandrasekar





Glimpses of sports events

With the meet declared open, the first event conducted was 100 meter running finals for boys and girls, followed by various other track and field events. Faculty-Staff of IIST and their kids also participated in various sports events. Medal distributions were also done in between by faculty and Heads of Departments.

All the events went smoothly and on time with large student participations in almost all the sports events conducted on sports day. The IIST's sports day events concluded by 2.00 pm on 1st February 2020.

Swachh Campus Activities

The Swachhta Pakwada campaign organised from 01.02.2020 – 18.02.2020 with various programmes such as plogging, collection of plastic waste, promoting glass bottles instead of plastic bottles and avoiding flex boards in campus. Haritha Karma Sena of Nedumangad Municipal Corporation collected cleaned plastic wastes from the campus. IIST Students and faculty visited 'Ayalkoottam' to spread awareness about harmfulness of plastic wastes. Quiz was conducted at VK Kanj High School, Nedumangad as part of the Swachh Bharat activities. IIST Students and faculty visited two colonies near the campus and made a comprehensive study. Nirman group of the institute organised programmes to educate students on Swachh Bharat Abhiyaan.



'Plogging' organised as part of Swachhta Pakhwada 2020

Efforts are progressing to find alternatives for single use plastic in the campus. Cleaning drive was organised to clean all building in the campus. As part of scientific waste management, IIST has implemented dustbins for segregation of waste, Vermicompost pits and Bio gas plant. Fumigation and pest control measures were done according to the schedule. IIST has implemented dual flushing system in toilets, push cock flush, combing water taps, recycled water from STP, sensor urinals and rain water harvesting mechanism. All the activities towards a Swachh Campus were updated in the social media pages of the institute.



Swachh Bharat Pledge

ISRO Sub Committee for Inspection & Evaluation of Centres visited IIST campus on 3rd March 2020 to evaluate the various measures initiated in the institute towards building a clean environment. IIST Swachh Bharat Committee Chairman made a brief presentation on the various measures implemented by the Institute towards a Swachh campus. The evaluation committee complemented the efforts of the institute and advised to continuously monitor the activities and new innovative measures implemented.

Hindi Events @ IIST

आईआईएसटी में आयोजित विविध हिंदी कार्यक्रम

संस्थान में जनवरी से जून 2020 तक निम्नलिखित कार्यक्रम आयोजित किए गए।

विश्व हिंदी दिवस समारोह 2020

विश्व हिंदी दिवस समारोह - 2020 में संस्थान के कर्मचारियों, संकाय सदस्यों एवं छात्रों के लिए जनवरी 07, 2020 को हिंदी निबंध लेखन प्रतियोगिताएं चलाई गईं। जनवरी 10 को “विश्व भाषा हिंदी” विषय पर हिंदी विभाग, सरकारी कॉलेज, नेडुमंगाड के सहायक आचार्य व अध्यक्ष डॉ. शामली एम.एम. ने विशेष व्याख्यान दिया। उसी दिन पुरस्कार वितरण समारोह का आयोजन भी किया गया। प्रतियोगिताओं के विजेताओं को निदेशक महोदय एवं डॉ. शामली एम.एम. द्वारा नकद पुरस्कार एवं प्रमाण पत्र वितरित किए गए।



पुरस्कार वितरण समारोह

हिंदी कार्यशाला का आयोजन

तकनीकी क्षेत्र के लिए हिंदी कार्यशाला

आईआईएसटी में राजभाषा कार्यान्वयन की गतिविधियों के भाग के रूप में, संस्थान के तकनीकी क्षेत्र के कर्मचारियों के लिए 17 एवं 18 फरवरी 2020 को दो अर्ध दिवसीय हिंदी कार्यशाला का आयोजन किया गया जिसमें 13 तकनीकी कर्मचारियों ने सक्रिय रूप से भाग लिया। श्री. आर. जयपाल, वरिष्ठ हिंदी अधिकारी, आईआईएसटी ने “सरकार की राजभाषा नीति का कार्यान्वयन” विषय पर विस्तृत व्याख्यान दिया तथा श्री. एम. जी. सोमशेखरन नायर, वरिष्ठ हिंदी अधिकारी, वीएसएससी ने “हिंदी की तकनीकी शब्दावली एवं उसका प्रयोग” विषय पर अभ्यास कराया। श्री. के अनिल कुमार, मुख्य प्रबंधक (राजभाषा), भारतीय स्टेट बैंक ने “राजभाषा हिंदी के लिए इलेक्ट्रॉनिक उपकरण” विषय पर कक्षा का संचालन किया। उन्होंने प्रतिभागियों को विविध ई - टूल्स का परिचय दिया एवं श्रीमती अनुश्री पी, वरिष्ठ हिंदी अनुवादक, “हिंदी में सामान्य टिप्पण एवं अभ्यास” विषय पर अभ्यास कराया।



कार्यशाला का संचालन करते हुए श्री. एम. जी. सोमशेखरन नायर और श्री. श्री. के अनिल कुमार, मुख्य प्रबंधक (राजभाषा)

Students Corner

Award & Recognition

Ms. Garima Aggarwal, the topper of B.Tech (Aerospace Engineering) 2019 pass out batch from IIST has been awarded "The Abdul Kalam Prize" for the year 2020 by California Institute of Technology, USA. The above prize is awarded by CalTech to a student in the Aerospace Engineering Master's Programme whose academic performance is exemplary and who has shown high potential for future achievements at CalTech.

Ms. Aggarwal is the seventh student from the Aerospace Engineering Department of Indian Institute of Space Science and Technology to avail Professor Satish Dhawan Endowment, a joint initiative by ISRO and CalTech that provides complete assistance to a student from IIST to pursue a Master's programme at CalTech.

Ms. Aggarwal is the fourth student from Indian Institute of Space Science and Technology to be awarded "The Abdul Kalam Prize". Shri Chapalkar Aditya Nithin, Shri Avinash Chandra, Shri Padmanabha Prasanna Simha have won "The Abdul Kalam Prize" for the years 2014, 2018 and 2019 respectively.

Ms. Aggarwal was selected to attend the prestigious 70th Lindau Nobel Laureate Meeting (Interdisciplinary). Seventy Nobel Laureates would gather to discuss and deliberate with 600 young scientist-students across the world.



SUCCESS IS NEVER FINAL. FAILURE IS NEVER FATAL. COURAGE IS WHAT COUNTS. - S.C. BOSE

Well done! These guys have participated in COVID AR HACKATHON|StartUp India and have made a AR game under the Guidance of

Dr. N. Selvanesan
&
Dr. Deepak Mishra

Download the app and watch the video by scanning the QR codes
Critics and bug reporting appreciated:
Send them to:
shriram.scf9b094@ug.iist.ac.in or
harsh.scf9b094@ug.iist.ac.in

Mr. Harsh Agarwal and Mr. Shriram T G, First Year B Tech students, have developed an AR game which was submitted to Covid AR challenge by 'GOI - Ministry of Commerce and Trade and Elixir Systems: COVID AR Challenge'.

C S E CLUB

Congratulations

Adithya Venkateswaran
B.Tech 2nd year, ECE (Avionics)

For getting selected to

Libre Space Foundation

Shri. Adithya Venkateswaran (2nd year B.Tech ECE) has been selected to Google Summer of Code 2020.

GSoC is an annual global program that aims in facilitating students to connect and code with open source, free software, and technology-related organizations. With a mere 20-25% acceptance rate, the program allows accepted students to gain exposure to real-world software development and employment opportunities in areas related to their academic pursuits, by awarding stipends and allocating mentors for guidance throughout the course of the project.



GSoC: <https://summerofcode.withgoogle.com/>
Find Adithya's proposal here:
<https://summerofcode.withgoogle.com/projects/...>

Shri. Prateep Basu, an IIST alumnus (2007 B. Tech, Aerospace batch) and Founder of Satsure, has been awarded the prestigious Karman Fellowship 2020.

A 10 member team of students lead by **Ms. Pragya Yagav** (M.Tech, Power Electronics), has reached quarter finals in India Innovation Challenge Design Contest 2019, a national level competition conducted by Department of Science and Technology, AICTE, and mygov.in. Over 17,000 teams from institutions all over India participated in the contest.



Shri. KVLN Mallikarjun has been awarded the first price in MV Chauhan Student Paper Presentation for his paper titled, "Parallel Operation of Battery Chargers in Small Satellite Electrical Power Systems" presented at INDICON 2019.



Students Visit to SPL and VSSC

As part of the familiarization program, B.Tech, M.Tech and PhD students from IIST, visited SPL and TERLS area of VSSC on 5th February 2020. On this occasion, the Director, SPL made a brief presentation about various state-of-the art instrumentation for various platforms such as ground based (in situ), airborne (balloon and aircraft) and space borne (satellite) to study the Sun-Earth system.

The students also visited at TERLS area, VSSC to gain exposure on various scientific instruments commissioned at TERLS for surface, upper air observations including DWR facility and weather balloon launch.



Visit of Prof. John G Spray (Director, Planetary and Space Centre, University of New Brunswick, Canada) to IIST

Prof. John G. Spray (Director, Planetary and Space Centre, University of New Brunswick in Canada) visited the IIST on January 28, 2020. He delivered a lecture on the topic 'Present and Future Threats to Space Based Systems'. He discussed various experiments which demonstrate the response of solid surfaces to meteorite impacts of different velocities and the ongoing studies on testing and development of impact-resistant materials for the protection of humans as well as infrastructure. He described the current experiment in Planetary and Space Centre at the University of New Brunswick, where scientists use a gigantic gun to simulate micrometeorite strikes and test the future space shields. He also said that the future in spacecraft shielding would be self-healing materials that automatically repairs after they are hit with meteorites. He mentioned about the experiments testing the possibilities of using natural high-pressure minerals like ringwoodite and stishovite as shields, which possess the strength to withstand the impact-related effects and may later replace synthetic ceramic materials. He further discussed the significant issues of increasing space debris and the possible damage the debris can cause to the orbiting satellites as well as future missions. During the interaction, students were very keen to learn about developing technological capabilities for the protection of humans and infrastructure from meteoroidal impacts and other threats in future interplanetary and space missions. Prof. Spray had discussions with Director, IIST, Dean Academics, Dean R&D and Faculty of the Department of Earth and Space Sciences. He visited the Library and Geology Lab in IIST. He also interacted with research scholars and students of various Departments in IIST.



Prof. John G. Spray delivering the lecture

World Environment Day observed in the campus by observing the Covid-19 protocol. Director, Registrar, Deans, faculty and other staff planted saplings in the campus.



Balloon experiment at IIST Ponmudi Campus



Students at Climate Observatory and SPROC Telescope Facility, IIST Ponmudi Campus

Seven final-year M. Tech (ESS) students participated in the balloon experiment conducted at IIST Ponmudi Climate Observatory on 19th February 2020. Students were explained about the various aspects of balloon experiments, importance of ozone and atmospheric profile measurement for validation of ISRO's satellite retrievals, including aerosol-cloud measurements at Ponmudi Climate Observatory. The students were also briefly explained about the Satellite Photometry Laser Ranging and Optical Communication (SPROC) facility under Laboratory for Electro-Optics Systems (LEOS) of the ISRO, commissioned at Ponmudi Climate Observatory for monitoring of space debris and orbit determination of geostationary satellite.

Foot Pedal Operated Hand Sanitiser Dispenser



A foot pedal operated hand sanitiser dispenser was designed and developed by a team from Manufacturing Processes Lab, IIST under the guidance of Dr. V. S. Sooraj, Department of Aerospace. Manufacturing of dispensers, with a revised and low cost design, is going in a phased manner at Manufacturing Processes Lab for its installation and use at various functional locations of IIST. Team involved: Dr. V. S. Sooraj, Shri. Prakash and a team of technicians at Manufacturing Processes Lab.

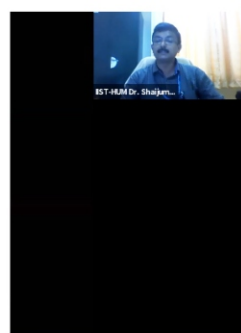
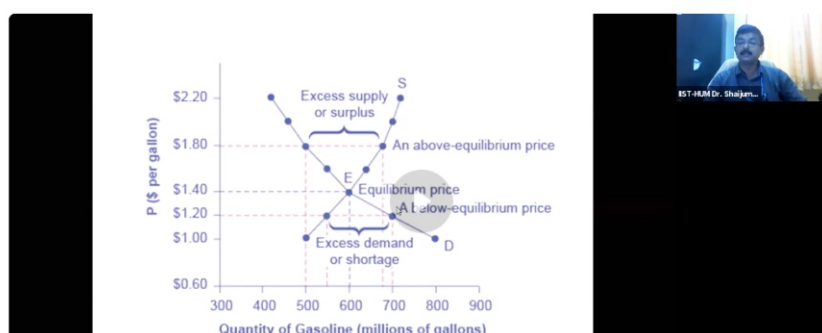
Academics during Covid 19

While the institute was planning on how best to proceed under the difficult times of Covid 19, IISTians have taken up various activities to keep themselves occupied during these unexpected holidays. Apart from the academic activities which have been shifted to different online platforms such as zoom, google classroom, a major portion of the students have enrolled in various online courses. With coursera, an online platform which offers diverse courses from premier institutes all over the globe has tied up with IIST, and offered free certificate courses on various topics to the student community. Utilising this golden opportunity, 399 students from IIST have enrolled for 2073 courses, as on June 30. Many students have enrolled in more than one course, in order to better maximise their return from the platform. Furthermore, IISTians have also been participating in webinars and various online competitions, both technical and cultural.

zoom

BTECH-2019-AEROSPACE ENGINEERING-SEM... - Shared screen with speaker view

Download (3 files)



Chat Messages

SC19B041 Tirth Solanki (40) 37:35
Link for attendance
SC19B041 Tirth Solanki (40) 37:36
https://docs.google.com/forms/d/e/1FAIpQLScTs83IMrbg-8lxKzW3zYTGMBQCe_RjldnCHYrG-C2Gtb7bhg/viewform?usp=sf_link

Online Classes

Dept. of Aerospace Engineering

The department has conducted about 10 core undergraduate B.Tech aerospace courses and 6 elective courses. In addition, lab course valuations and comprehensive viva-voce were also conducted on-line by faculty from 31 March to 30 June 2020. Similarly, total 18 online lectures were also conducted for Post graduate programmes in aerospace department during the same period.

Dept. of Avionics

The department in total has conducted about 19 undergraduate core and elective courses and 11 postgraduate courses. The department faculty members have also supervised and monitored both UG and PG projects online. In addition to this viva-voce examinations have also been conducted via Zoom meetings.

Dept. of Chemistry

The department has conducted online classes through Zoom (live lectures), Skype (live lectures) and by sharing Audio recorded Presentations to BTech (II, V and VI Semester) and PG (Materials Science and Technology) students. The student participation in the classes were above 90% and the internal assessment presentations could also be effectively conducted through Zoom/Skype. The Department also conducted online supplementary examination (proctored examination via Wheebox) for BTech students and the final project presentation and viva voce for PG students.

Dept. of Earth and Space Sciences (ESS)

During March 31st to 30th June 2020, faculty members of Earth and Space Sciences have conducted virtual classes using Zoom and PPT with or without voice recording. Total number of online classes conducted by the faculty members of ESS: 110

Dept. of Humanities

The department has conducted 5 courses (Core and Elective) in English, Economics, Social Science and Management to undergraduate students during March to June 2020.

Dept. of Mathematics

The department has conducted about 7 B.Tech and 4 M.Tech and 1 Ph.D level courses through Zoom link.

Dept. of Physics

The faculty of the department have conducted online classes for the B Tech and PG courses handled by them during the lockdown period. For the first year B Tech, for Physics II, 18 online lectures were taken. For the second year B Tech EP programme, 16 lectures each were taken through the online mode for the classical Mechanics and Modern Optics courses. For the third year B Tech EP, 18 lectures were taken online for the introduction to Solid State Physics course. For the fourth year dual degree Solid State Physics, 17 lectures each were covered online for the Advanced Statistical Mechanics and Computational Physics courses. Similarly, for the Solid State Technology M. Tech course, 13 lectures for Solid State Physics II, and 6 lectures for the Device Physics and Nano Electronic course were taken online. For the M Tech in Optical Engineering course, for the Guided Waves course, the Adaptive Optics course, and the Optical System Analysis course, the students were actively engaged online to complete the syllabus. For several of the elective courses, the online method was adopted to render justice to the prescribed syllabus. All the viva and seminar presentations were completed online.

Club Activities

In addition to the online courses, the various clubs in IIST have also taken up the difficult task of continuing their activities online. The music club of IIST, had organized an open music competition by the name "Dhun". With esteemed musicians Anand Narayan and Rajalekshmi S as judges, the competition has been receiving a steady flow of entries both from inside and outside the IIST student community. The quiz club of IIST has started an online quiz series. The first quiz, a general quiz hosted on google meets saw a very good turnout especially from the IIST alumni. The second edition is a themed quiz on Indian history held on zoom. Many more quizzes are planned over the following weeks.

Webinars by IIST Faculty

Sl No	Name of Faculty	Dept.	Topic of the webinar	Date
1.	Dr. Immanuel Raja	AVI	"Introducing the World of Analog Integrated Circuits Design", IEEE Kerala Chapter	29 th June 2020
2.	Dr. Deepak Mishra	AVI	"Advances in Object Detection with Deep Learning", 4th National Conference on Recent Trends in Electronics and Electrical Engineering-2020 at Inderprastha Engineering College, Ghaziabad.	25 th & 26 th June 2020
3.	Dr. Deepak Mishra	AVI	Guest keynote on the topic "Introduction to Computer Vision with Deep Learning" organized by Kumaraguru College of Technology Mechatronics Engineering Chinnavedampatti, Coimbatore - 641049, Tamil Nadu.	21 st Feb 2020
4.	Dr. R Sudharshan Kaarthik	AVI	"Decoupled Control of Multi-Machine Multi-Phase Drives using a Single Inverter", IEEE Kerala Chapter	8 th June 2020
5.	Dr. R Sudharshan Kaarthik	AVI	"Integrated Battery Chargers for Electric Vehicles", IEEE Kerala Chapter and CET Trivandrum	13 th June 2020
6.	Dr. Chinmoy Saha	AVI	"Engineering Electromagnetics: Concept, Methodology and Techniques for High Impact Learning and Teaching", IEEE MTT-S NIT-T Student Branch Webinar	15 th June 2020
7.	Dr. Chinmoy Saha	AVI	"GHz to THz Antennas: Trends Techniques and Next Generation Requirements in Wireless Communication", IEEE APS and MTTS Manipal University Jaipur Chapter, June 10, 2020	10 th June 2020
8.	Dr. Chinmoy Saha	AVI	"Engineering Electromagnetics: Concept, Methodology and Techniques for High Impact Learning and Teaching", IEEE MTT-S Kerala Chapter Webinar Series	18 th May 2020
9.	Dr. M. S Harsha Simha	AVI	"An STTP on MATLAB based Teaching-Learning in Mathematics,	21 st May 2020

			Science & Engineering", Organized by DYP University, Mumbai	
10.	Dr. M. S Harsha Simha	AVI	Delivered a tutorial on "Complex Networks" at ICICCAS 2020	30 th June 2020
11.	Dr. M. S Harsha Simha	AVI	"Developing Satellite Networking technology for 5G and Beyond"	26 th June 2020
12.	Dr. Priyadarshnam	AVI	"Model Based Development of Embedded Control System", IIST	28 th April – 29 th April 2020
13.	Dr. Rajesh Joseph Abraham	AVI	"Control Systems Design with MATLAB"	25 th April 2020
14.	Dr. J Sheeba Rani	AVI	"Health care application on Machine Learning Techniques", organized by IEEE Madras section.	6 th June 2020
15.	Dr. Sarita Vig	ESS	"Our Star - The Sun" - Live streaming of Solar Eclipse from Kerala by Breakthrough Science Society streaming of Solar Eclipse from Kerala	21 st June 2020
16.	Dr. Sarita Vig	ESS	"Wonders of Cosmos" to higher secondary school students organised by Breakthrough Science Society	21 st April 2020
17.	Dr. Anand Narayanan	ESS	(i) "Extrasolar Planets and the Search for Habitable Worlds", Manipal Academy of Higher Education, (2) "The Universe and Us", Breakthrough Science Society, (3) "Chasing the Sun", NIT Trichy Astronomy Club	(i) 25 th February 2020 (ii) 3 rd April 2020 (iii) 2 nd May 2020
18.	Dr. M Govindan Kutty	ESS	"Tropical Cyclone and Climate" by Breakthrough Science Society	7 th June 2020
19.	Dr. M Govindan Kutty	ESS	"Climate Change", WMO Arts and Science College, Muttill	27 th June 2020
20.	Dr. C. S. Shaijumon	Hum	"Economic Policy Responses of Covid-19", St. Theresa's College, Ernakulum	26 th May 2020
21.	Dr. C. S. Shaijumon	Hum	"Socio-Economic Impact of Covid-19", at SreeAyyappa College, Nagercoil	9 th June 2020
22.	Dr. C. S. Shaijumon	Hum	"Strategies for Preparing Civil Services Examination", NSS College Pandalam, Kerala University	23 rd June 2020

23.	Dr. Babitha Justin	Hum	"Offers Creative Writing online classes 3 x 2" as part of public facilitation and extension activities at the behest of CM's Office for the students of India and abroad	23 rd April onward
24.	Dr. Babitha Justin	Hum	"Art and Pandemic", St. Aquinas College	22 nd May 2020
25.	Dr. Babitha Justin	Hum	Techniques in Poetry Writing' at Christ Nagar College, Trivandrum	29 th May 2020
26.	Dr. Babitha Justin	Hum	Literary Arts' National Reading Dayon, Key Note Address	1 st June 2020
27.	Dr. Babitha Justin	Hum	Literature and Art in the times of the Pandemic' Delivered lecture on the webinar series in the Department of English, Pondicherry.	23 rd June 2020
28.	Dr. Sarvesh Kumar	Maths	" Numerical Treatment for Initial and Boundary Value Problems" , Amity University, Noida, New Delhi	8 th May 2020
29.	Dr. Sarvesh Kumar	Maths	"Differential Equations and Applications to Optimal Control Problems", Kongunadu Arts and Science College, Coimbatore	4 th June 2020
30.	Dr. K Sakthivel	Maths	"Some Aspects of Solutions for Partial Differential Equations", Nirmala College, Coimbatore,	27 th May 2020
31.	Dr. E Natarajan	Maths	"FEM with Applications, FDP on Computational Mathematics", Mohammad Sathak A J College of Engineering, Chennai	27 th May 2020
32.	Dr. E Natarajan	Maths	"Modern Perspectives to Finite Element Method in Engineering Applications", SRM TRP Engineering College, Trichy	26 th June 2020
33.	Dr. S Murugesh	Phy	"Inverse Scattering Techniques and Solitons", online FDP on 'Recent Trends and Challenges in Advanced Physics', Nanjil Catholic College of Arts and Science, Kaliyakkavilai	5 th June 2020
34.	Dr. Umesh R. Kadhane	Phy	"Scientific Temperament: Only Ray of Hope in a Global Calamity", Public Lecture, Trivandrum	6 th April 2020

Awards/ Recognition (Faculty)

1. ISRO Team Award 2019 for ARIS

IIST's ARIS payload team led by Dr. Umesh R Kadhane (Physics) Dr. Sudharshan Kaarthik (Avionics), Dr. C. S. Anoop, (Avionics) and Dr. V. S. Sooraj (Aerospace) has been awarded ISRO's team award for the year 2019 by ISRO.

2. Dr. Sudharshan Kaarthik, Dept. of Avionics

- Associate Editorship for IEEE Open Journal of Industry Applications.
- A 10 member team of students led by Ms. Pragya Yagav (M.Tech, Power Electronics), has reached quarter finals in India Innovation Challenge Design Contest 2019, a national level competition conducted by Department of Science and Technology, AICTE, and my gov.in. Over 17,000 teams from institutions all over India participated in the contest.

3. Dr. Chinmoy Saha, Dept. of Avionics

- Associate Editor in IEEE Access.
- Guest Editor in Chief in the special issue entitled "Recent Trends And Techniques In Engineering Electromagnetics " in International Journal of RF and Microwave Computer Aided Engineering, Wile, USA.

4. Dr. C S Anoop, Dept. of Avionics

Associate Editor, IEEE Transactions of Instrumentation and Measurement.



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