# Yearly Status Report - 2019-2020

| Part A | |
|---|---|
| **Data of the Institution** | |
| **1. Name of the Institution** | **INDIAN INSTITUTE OF SPACE SCIENCE AND TECHNOLOGY** |
| Name of the head of the Institution | **Dr V K Dadhwal** |
| Designation | **Director** |
| Does the Institution function from own campus | **Yes** |
| Phone no/Alternate Phone no. | **04712568402** |
| Mobile no. | **7022267122** |
| Registered Email | **registrar@iist.ac.in** |
| Alternate Email | **director@iist.ac.in** |
| Address | **Valiamala Post** |
| City/Town | **Thiruvananthapuram** |
| State/UT | **Kerala** |
| Pincode | **695547** |

## 2. Institutional Status

| | |
|---|---|
| University | **Deemed** |
| Type of Institution | **Co-education** |
| Location | **Rural** |
| Financial Status | **central** |
| Name of the IQAC co-ordinator/Director | **Dr K S Subrahamanian Moosath** |
| Phone no/Alternate Phone no. | **04712568538** |
| Mobile no. | **9495743148** |
| Registered Email | **smoosath@iist.ac.in** |
| Alternate Email | **smoosath@gmail.com** |

## 3. Website Address

| | |
|---|---|
| Web-link of the AQAR: (Previous Academic Year) | [https://www.iist.ac.in/aboutus/iqac](https://www.iist.ac.in/aboutus/iqac) |

| | |
|---|---|
| **4. Whether Academic Calendar prepared during the year** | **Yes** |
| if yes,whether it is uploaded in the institutional website: Weblink : | [https://iist.ac.in/academics/calendar](https://iist.ac.in/academics/calendar) |

## 5. Accrediation Details

| Cycle | Grade | CGPA | Year of Accreditation | Validity | |
|---|---|---|---|---|---|
| | | | | Period From | Period To |
| 1 | B | 2.87 | 2013 | 08-Jul-2013 | 07-Jul-2018 |

| | |
|---|---|
| **6. Date of Establishment of IQAC** | **16-Feb-2012** |

## 7. Internal Quality Assurance System

| Quality initiatives by IQAC during the year for promoting quality culture | | |
|---|---|---|
| Item /Title of the quality initiative by IQAC | Date & Duration | Number of participants/ beneficiaries |
| No Data Entered/Not Applicable!!! | | |
| No Files Uploaded !!! | | |

**8. Provide the list of Special Status conferred by Central/ State Government-UGC/CSIR/DST/DBT/ICMR/TEQIP/World Bank/CPE of UGC etc.**

| Institution/Department/Faculty | Scheme | Funding Agency | Year of award with duration | Amount |
|---|---|---|---|---|
| Nil | Nil | Nil | 2020 0 | 0 |
| No Files Uploaded !!! | | | | |

| | |
|---|---|
| **9. Whether composition of IQAC as per latest NAAC guidelines:** | Yes |
| Upload latest notification of formation of IQAC | <u>View File</u> |
| **10. Number of IQAC meetings held during the year :** | 0 |
| The minutes of IQAC meeting and compliances to the decisions have been uploaded on the institutional website | No |
| Upload the minutes of meeting and action taken report | No Files Uploaded !!! |
| **11. Whether IQAC received funding from any of the funding agency to support its activities during the year?** | No |

**12. Significant contributions made by IQAC during the current year(maximum five bullets)**

• The institute implemented the Government of India order to reserve 10 of seats in undergraduate and postgraduate programmes for the "Economically Weaker Section"(EWS) category from the academic year 20192020 onwards • The institute offers postgraduate admission based on GATE score only for some programmes while other programmes had seat allotment for PG based on both GATE score and interview. Till the academic year 20182019, the above mentioned PG interviews were held at IIST, Thiruvananthapuram. In order to have wider cross section of PG students joining IIST from all across the country and keeping the interests of aspiring PG students in mind, the institute implemented the decision to conduct the PG interviews online from 20192020 academic year onwards with aspiring PG candidates showing up to the nearest venues in any one of the six ISRO/DoS centers at Chennai, Thiruvananthapuram, Hyderabad, Mumbai/Ahmedabad, New Delhi and Kolkata .

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**13. Plan of action chalked out by the IQAC in the beginning of the academic year towards Quality Enhancement and outcome achieved by the end of the academic year**

| Plan of Action | Achivements/Outcomes |
|---|---|
| Due to Covid-19 pandemic situation it was decided to have PhD defence/PhD Viva from March 2020 onwards using online mode only | Proposed and accepted |
| Due to Covid-19 pandemic situation it was decided to have all lab exams, viva voce and seminar evaluations for the even semester 2019-2020 academic year using online mode only | Proposed and accepted |
| Due to Covid 19 pandemic situation it was decided to award the grades for all the courses for the even semester 2019-2020 academic year based on Quiz I (15 marks) and Internal assessment (25 marks) | Proposed and accepted |
| Due to Covid19 pandemic situation it was decided to change the classes from offline mode to online mode | Proposed and accepted |
| Due to Covid-19 pandemic situation it was decided to have all official meetings including academic related meetings from March 2020 onwards using online mode only | Proposed and accepted |
| No Files Uploaded !!! | |

| | |
|---|---|
| **14. Whether AQAR was placed before statutory body ?** | No |
| **15. Whether NAAC/or any other accredited body(s) visited IQAC or interacted with it to assess the functioning ?** | No |
| **16. Whether institutional data submitted to AISHE:** | Yes |
| Year of Submission | 2019 |
| Date of Submission | 24-Dec-2019 |
| **17. Does the Institution have Management Information System ?** | Yes |
| If yes, give a brief descripiton and a list of modules currently operational (maximum 500 words) | IIST does have the information system (iCampus) that assist the complete academic module and admission portal for UG/PG and PhD programmes. The highlights of the iCampus is as following: 1. Marking students attendance 2. Course allocation 3. Evaluation for both Quiz's and End |

## Part B

## CRITERION I – CURRICULAR ASPECTS

### 1.1 – Curriculum Design and Development

1.1.1 – Programmes for which syllabus revision was carried out during the Academic year

| Name of Programme | Programme Code | Programme Specialization | Date of Revision |
| --- | --- | --- | --- |
| Mtech | MES01 | Earth System Science | 22/07/2019 |
| View File | | | |

1.1.2 – Programmes/ courses focussed on employability/ entrepreneurship/ skill development during the Academic year

| Programme with Code | Programme Specialization | Date of Introduction | Course with Code | Date of Introduction |
| --- | --- | --- | --- | --- |
| BTech | UG | 22/07/2019 | HS467 | 22/07/2019 |
| View File | | | | |

### 1.2 – Academic Flexibility

1.2.1 – New programmes/courses introduced during the Academic year

| Programme/Course | Programme Specialization | Dates of Introduction |
| --- | --- | --- |
| Mtech | Digital Signal Processing | 22/07/2019 |
| View File | | |

1.2.2 – Programmes in which Choice Based Credit System (CBCS)/Elective Course System implemented at the University level during the Academic year.

| Name of programmes adopting CBCS | Programme Specialization | Date of implementation of CBCS/Elective Course System |
| --- | --- | --- |
| BTech | Aerospace Engineering | 23/07/2018 |
| BTech | Electronics and Communication Engieering(Avionics) | 23/07/2018 |
| BTech | Engineering Physics | 23/07/2018 |

### 1.3 – Curriculum Enrichment

1.3.1 – Value-added courses imparting transferable and life skills offered during the year

| Value Added Courses | Date of Introduction | Number of Students Enrolled |
| --- | --- | --- |
| Computer Vision | 22/07/2019 | 14 |
| View File | | |

1.3.2 – Field Projects / Internships under taken during the year

| Project/Programme Title | Programme Specialization | No. of students enrolled for Field Projects / Internships |
| --- | --- | --- |
| BTech | Aerospace Engineering | 59 |

## 1.4 – Feedback System

1.4.1 – Whether structured feedback received from all the stakeholders.

| Students | Yes |
| --- | --- |
| Teachers | No |
| Employers | No |
| Alumni | No |
| Parents | No |

1.4.2 – How the feedback obtained is being analyzed and utilized for overall development of the institution? (maximum 500 words)

| Feedback Obtained |
| --- |
| All the academic programmes and curricula are designed based on extensive feedback given by academic peers, engineers/scientists from various ISRO centers, other research organizations, and industry experts. We also take the parents into confidence regarding our academic programmes at the time of student counselling when parents visit the campus. The input from all the stakeholders is considered at the time of curriculum revisions. In IIST, we have a formal mechanism to obtain student feedback on all the courses. Students give anonymous feedback on the course they have attended at the end of each semester. Students play an important role in providing the detailed feedback about the course content, and delivery methodology adopted by the instructor. The feedbacks are collected, evaluated and discussed in the department level meetings. These inputs are taken into consideration while revising the curriculum. We also collect feedback from alumni for getting useful suggestions for improving the curriculum. Informal feedbacks are also collected from students on the courses and curriculum during discussions in the respective class committee meetings which we regularly conduct after each quiz. We use indigenously developed iCampus portal to collect the feedback from students. They are asked to give their feedback with respect to reading material provided, reference books, examination pattern, teaching method, doubt clearing, quality of question papers/ assignments, etc. A summary report is then generated and forwarded to the respective faculty. Suitable corrective action if necessary is taken by the faculty in consultation with Head of the department. |

## CRITERION II – TEACHING- LEARNING AND EVALUATION

### 2.1 – Student Enrolment and Profile

2.1.1 – Demand Ratio during the year

| Name of the Programme | Programme Specialization | Number of seats available | Number of Application received | Students Enrolled |
| --- | --- | --- | --- | --- |
| BTech | Aerospace Engineering | 66 | 3587 | 66 |
| View File | | | | |

### 2.2 – Catering to Student Diversity

2.2.1 – Student - Full time teacher ratio (current year data)

| Year | Number of students enrolled in the institution (UG) | Number of students enrolled in the institution (PG) | Number of fulltime teachers available in the institution | Number of fulltime teachers available in the institution | Number of teachers teaching both UG and PG courses |
| --- | --- | --- | --- | --- | --- |

| | | | teaching only UG courses | teaching only PG courses | |
| --- | --- | --- | --- | --- | --- |
| 2019 | 478 | 260 | 5 | 5 | 95 |

## 2.3 – Teaching - Learning Process

2.3.1 – Percentage of teachers using ICT for effective teaching with Learning Management Systems (LMS), E-learning resources etc. (current year data)

| Number of Teachers on Roll | Number of teachers using ICT (LMS, e-Resources) | ICT Tools and resources available | Number of ICT enabled Classrooms | Numberof smart classrooms | E-resources and techniques used |
| --- | --- | --- | --- | --- | --- |
| 105 | 105 | 21 | 15 | 4 | 4 |

View File of ICT Tools and resources

View File of E-resources and techniques used

2.3.2 – Students mentoring system available in the institution? Give details. (maximum 500 words)

The mentoring system at IIST nurtures the very goal, and is initiated to help student grow into self sufficient individuals within the 4-5 years of academic life. Institute has an actively functioning mentors committee under the Students Activity (SA) board since 2014. This is a voluntary service rendered by the faculty members of IIST focusing primarily the first year B. Tech. students. The aim is to provide a friendly guidance to the newly joined teen-age students who are possibly going to stay outside of their parents umbrella for the first time. Many students find the transition difficult and mentoring provides extra support for them in finding footing in the institute. Mentoring system at IIST assist the first year students in adapting to the new system, helping them solve multiple issues be it administration, language issues, logistics, personal problems, academics and so on. Each volunteered faculty have been assigned 4-5 students each year. The students are advised to meet the assigned faculty once a week and discuss their difficulty at various levels. Mentors also make sure that the assigned students meet them regularly on a one to one basis. In fact mentors bridges between the mentees, first year teaching faculty, counsellors, and parents in case a situation arises. During the time of counselling, opportunities are provided for the parents of the mentees to interact with the mentors. Personal contact numbers of the mentors are given to the students as well as parents for any further interaction in the future. Mentors meet once a month along with the teaching faculty to discuss the issues of their mentees and collectively take quality decisions and develop strategies to further help the students. Mentors continue to support the students in the following years too in case they are in need. Committee of mentors is chaired by Dean - Student Affairs and based on the input given by mentors, possible changes are implemented in the hostel, administration etc. and suggestions were forwarded to academics for addressing in a timely manner.

| Number of students enrolled in the institution | Number of fulltime teachers | Mentor : Mentee Ratio |
| --- | --- | --- |
| 738 | 105 | 1:7 |

## 2.4 – Teacher Profile and Quality

2.4.1 – Number of full time teachers appointed during the year

| No. of sanctioned positions | No. of filled positions | Vacant positions | Positions filled during the current year | No. of faculty with Ph.D |
| --- | --- | --- | --- | --- |
| 123 | 94 | 1 | 1 | 1 |

2.4.2 – Honours and recognition received by teachers (received awards, recognition, fellowships at State, National, International level from Government, recognised bodies during the year )

| Year of Award | Name of full time teachers receiving awards from state level, national level, international level | Designation | Name of the award, fellowship, received from Government or recognized bodies |
| --- | --- | --- | --- |
| 2019 | Dr Kuruvilla Joseph | Professor | Admitted as a fellow of the Royal Society of |

| | | | | Chemistry |
|---|---|---|---|---|

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## 2.5 – Evaluation Process and Reforms

2.5.1 – Number of days from the date of semester-end/ year- end examination till the declaration of results during the year

| Programme Name | Programme Code | Semester/ year | Last date of the last semester-end/ year-end examination | Date of declaration of results of semester-end/ year- end examination |
|---|---|---|---|---|
| BTech | BAE01 | First | 29/11/2019 | 11/12/2019 |

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2.5.2 – Average percentage of Student complaints/grievances about evaluation against total number appeared in the examinations during the year

| Number of complaints or grievances about evaluation | Total number of students appeared in the examination | Percentage |
|---|---|---|
| 0 | 0 | 0 |

## 2.6 – Student Performance and Learning Outcomes

2.6.1 – Program outcomes, program specific outcomes and course outcomes for all programs offered by the institution are stated and displayed in website of the institution (to provide the weblink)

<div align="center">https://www.iist.ac.in/iqac</div>

2.6.2 – Pass percentage of students

| Programme Code | Programme Name | Programme Specialization | Number of students appeared in the final year examination | Number of students passed in final year examination | Pass Percentage |
|---|---|---|---|---|---|
| BAE01 | BTech | Aerospace Engineering | 59 | 59 | 100 |

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## 2.7 – Student Satisfaction Survey

2.7.1 – Student Satisfaction Survey (SSS) on overall institutional performance (Institution may design the questionnaire) (results and details be provided as weblink)

<div align="center">https://www.iist.ac.in/iqac</div>

## CRITERION III – RESEARCH, INNOVATIONS AND EXTENSION

### 3.1 – Promotion of Research and Facilities

3.1.1 – Teachers awarded National/International fellowship for advanced studies/ research during the year

| Type | Name of the teacher awarded the fellowship | Name of the award | Date of award | Awarding agency |
|---|---|---|---|---|
| National | Dr K Sakthivel | Full Travel Grant Award from DAE/ National Board for Higher Mathematics (NBHM) to | 15/07/2019 | National Board for Higher Mathematics (NBHM) |

| | |
|---|---|
| attend the International Congress on Industrial and Applied Mathematics held at Valencia, Spain during July 15-19, 2019. | |

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3.1.2 – Number of JRFs, SRFs, Post Doctoral Fellows, Research Associates and other fellows in the Institution enrolled during the year

| Name of Research fellowship | Duration of the fellowship | Funding Agency |
|---|---|---|
| 14 | 1095 | DST-SERB, Max-Plank-Gesellschaften, SAMEER-MoETY, SAC-funded NAVIC-GAGAN, ISRO-MOM 2,IIST-LPSC |

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## 3.2 – Resource Mobilization for Research

3.2.1 – Research funds sanctioned and received from various agencies, industry and other organisations

| Nature of the Project | Duration | Name of the funding agency | Total grant sanctioned | Amount received during the year |
|---|---|---|---|---|
| Major Projects | 1095 | DST, SERB, DBT, DAE, MEITY,ICSSR, Mangroove cell, Maxplank | 72079742 | 16549990 |

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## 3.3 – Innovation Ecosystem

3.3.1 – Workshops/Seminars Conducted on Intellectual Property Rights (IPR) and Industry-Academia Innovative practices during the year

| Title of workshop/seminar | Name of the Dept. | Date |
|---|---|---|
| Artificial Compressibility Method for Incompressible Two-Phase Flows-Lecture,Mr. Sanal Parameswaran, IIT Bombay | Aerospace Engineering | 27/08/2019 |

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3.3.2 – Awards for Innovation won by Institution/Teachers/Research scholars/Students during the year

| Title of the innovation | Name of Awardee | Awarding Agency | Date of award | Category |
|---|---|---|---|---|
| Innovative Project Award | Ms.Sneha Gem mathew, Dr. S.Chris Prema | INAE | 13/12/2019 | Project |

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| 3.3.3 – No. of Incubation centre created, start-ups incubated on campus during the year | | | | | |
|---|---|---|---|---|---|
| Incubation Center | Name | Sponsored By | Name of the Start-up | Nature of Start-up | Date of Commencement |
| 0 | Nil | Nil | 0 | 0 | Nill |
| No file uploaded. | | | | | |

## 3.4 – Research Publications and Awards

### 3.4.1 – Ph. Ds awarded during the year

| Name of the Department | Number of PhD's Awarded |
|---|---|
| Physics | 3 |
| Chemistry | 2 |
| Aerospace Engineering | 3 |
| Earth and Space Sciences | 1 |
| Avionics | 2 |
| Mathematics | 1 |
| Humanities | 2 |

### 3.4.2 – Research Publications in the Journals notified on UGC website during the year

| Type | Department | Number of Publication | Average Impact Factor (if any) |
|---|---|---|---|
| International | Aerospace Engineering | 36 | Nill |
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### 3.4.3 – Books and Chapters in edited Volumes / Books published, and papers in National/International Conference Proceedings per Teacher during the year

| Department | Number of Publication |
|---|---|
| Avionics | 2 |
| View File | |

### 3.4.4 – Patents published/awarded/applied during the year

| Patent Details | Patent status | Patent Number | Date of Award |
|---|---|---|---|
| Nil | Nill | 0 | Nill |
| No file uploaded. | | | |

### 3.4.5 – Bibliometrics of the publications during the last academic year based on average citation index in Scopus/ Web of Science or PubMed/ Indian Citation Index

| Title of the Paper | Name of Author | Title of journal | Year of publication | Citation Index | Institutional affiliation as mentioned in the publication | Number of citations excluding self citation |
|---|---|---|---|---|---|---|
| Quantitative representation of floral colors | Athira K., Sooraj N.P., Jaishanker R., Kumar V.S., Sajeev C.R., | Color Research Application, 44(3):426-432. | 2019 | Nill | IIST | Nill |

|  | Pillai M.S., Govind A., Dadhwal V.K. |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |

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3.4.6 – h-Index of the Institutional Publications during the year. (based on Scopus/ Web of science)

| Title of the Paper | Name of Author | Title of journal | Year of publication | h-index | Number of citations excluding self citation | Institutional affiliation as mentioned in the publication |
| --- | --- | --- | --- | --- | --- | --- |
| Quantitative representation of floral colors | Athira K., Sooraj N.P., Jaishanker R., Kumar V.S., Sajeev C.R., Pillai M.S., Govind A., DADHWAL V.K. | Color Research Application, 44(3), 426-432. | 2019 | Nill | Nill | IIST |

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3.4.7 – Faculty participation in Seminars/Conferences and Symposia during the year

| Number of Faculty | International | National | State | Local |
| --- | --- | --- | --- | --- |
| Attended/Seminars/Workshops | 20 | 4 | 0 | 0 |
| Presented papers | 58 | 60 | 9 | 0 |
| Resource persons | 8 | 40 | 117 | 0 |

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## 3.5 – Consultancy

3.5.1 – Revenue generated from Consultancy during the year

| Name of the Consultan(s) department | Name of consultancy project | Consulting/Sponsoring Agency | Revenue generated (amount in rupees) |
| --- | --- | --- | --- |
| Physics | Development and implementation of diagnostic tools for High Thrust Electric Propulsion System | LPSC | 5600000 |

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3.5.2 – Revenue generated from Corporate Training by the institution during the year

| Name of the Consultan(s) department | Title of the programme | Agency seeking / training | Revenue generated (amount in rupees) | Number of trainees |
| --- | --- | --- | --- | --- |

| Dr R V Ramanan : Depart of Aerospace Engineering | Introduction to Space Technology for EME Officers of Defence | DRDO | 200000 | 15 |
|---|---|---|---|---|
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## 3.6 – Extension Activities

3.6.1 – Number of extension and outreach programmes conducted in collaboration with industry, community and Non- Government Organisations through NSS/NCC/Red cross/Youth Red Cross (YRC) etc., during the year

| Title of the activities | Organising unit/agency/ collaborating agency | Number of teachers participated in such activities | Number of students participated in such activities |
|---|---|---|---|
| Young Talent Nurture-a two-week programme, which aims at nurturing young mathematical talents | Department of Mathematics | 11 | 40 |
| View File | | | |

3.6.2 – Awards and recognition received for extension activities from Government and other recognized bodies during the year

| Name of the activity | Award/Recognition | Awarding Bodies | Number of students Benefited |
|---|---|---|---|
| Nil | 0 | 0 | 0 |
| No file uploaded. | | | |

3.6.3 – Students participating in extension activities with Government Organisations, Non-Government Organisations and programmes such as Swachh Bharat, Aids Awareness, Gender Issue, etc. during the year

| Name of the scheme | Organising unit/Agency/collaborating agency | Name of the activity | Number of teachers participated in such activites | Number of students participated in such activites |
|---|---|---|---|---|
| Nil | Nil | Nil | 0 | 0 |
| No file uploaded. | | | | |

## 3.7 – Collaborations

3.7.1 – Number of Collaborative activities for research, faculty exchange, student exchange during the year

| Nature of activity | Participant | Source of financial support | Duration |
|---|---|---|---|
| Research work in CI2MA: Research Centre for Mathematical engineering, Universidad de Concepcion Chile | Nill | Nill | Nill |
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3.7.2 – Linkages with institutions/industries for internship, on-the- job training, project work, sharing of research facilities etc. during the year

| Nature of linkage | Title of the linkage | Name of the partnering | Duration From | Duration To | Participant |
|---|---|---|---|---|---|

| Internship | Internship | Attended 30th British Machine Vision Conference (BMVC).UK | 09/09/2019 | 12/09/2019 | Dr J Sheebarani |
|---|---|---|---|---|---|

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3.7.3 – MoUs signed with institutions of national, international importance, other universities, industries, corporate houses etc. during the year

| Organisation | Date of MoU signed | Purpose/Activities | Number of students/teachers participated under MoUs |
|---|---|---|---|
| Nil | Nill | Nil | 0 |

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# CRITERION IV – INFRASTRUCTURE AND LEARNING RESOURCES

## 4.1 – Physical Facilities

4.1.1 – Budget allocation, excluding salary for infrastructure augmentation during the year

| Budget allocated for infrastructure augmentation | Budget utilized for infrastructure development |
|---|---|
| 267768000 | 236258976 |

4.1.2 – Details of augmentation in infrastructure facilities during the year

| Facilities | Existing or Newly Added |
|---|---|
| Campus Area | Newly Added |
| Class rooms | Newly Added |

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## 4.2 – Library as a Learning Resource

4.2.1 – Library is automated {Integrated Library Management System (ILMS)}

| Name of the ILMS software | Nature of automation (fully or patially) | Version | Year of automation |
|---|---|---|---|
| Koha | Fully | 3.02.05.000 | 2011 |

4.2.2 – Library Services

| Library Service Type | Existing | | Newly Added | | Total | |
|---|---|---|---|---|---|---|
| Text Books | 10453 | 4902861 | 80 | 46336 | 10533 | 4949197 |

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4.2.3 – E-content developed by teachers such as: e-PG- Pathshala, CEC (under e-PG- Pathshala CEC (Under Graduate) SWAYAM other MOOCs platform NPTEL/NMEICT/any other Government initiatives &amp; institutional (Learning Management System (LMS) etc

| Name of the Teacher | Name of the Module | Platform on which module is developed | Date of launching e-content |
|---|---|---|---|

| Nil | Nil | Nill | Nill |
|-----|-----|------|------|

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## 4.3 – IT Infrastructure

### 4.3.1 – Technology Upgradation (overall)

| Type | Total Computers | Computer Lab | Internet | Browsing centers | Computer Centers | Office | Departments | Available Bandwidth (MBPS/ GBPS) | Others |
|------|------|------|------|------|------|------|------|------|------|
| Existing | 949 | 346 | 880 | 14 | 207 | 151 | 231 | 1 | 0 |
| Added | 15 | 7 | 14 | 0 | 3 | 1 | 4 | 0 | 0 |
| Total | 964 | 353 | 894 | 14 | 210 | 152 | 235 | 1 | 0 |

### 4.3.2 – Bandwidth available of internet connection in the Institution (Leased line)

**1 MBPS/ GBPS**

### 4.3.3 – Facility for e-content

| Name of the e-content development facility | Provide the link of the videos and media centre and recording facility |
|------|------|
| Audio Visual Lab | https://www.iist.ac.in/departments/humanities-lab#22222 https://drive.google.com/file/d/1e5CUymHIdFInQ3M6oixNr8Ty1sQrmOnN/view?usp=sharing |

## 4.4 – Maintenance of Campus Infrastructure

### 4.4.1 – Expenditure incurred on maintenance of physical facilities and academic support facilities, excluding salary component, during the year

| Assigned Budget on academic facilities | Expenditure incurred on maintenance of academic facilities | Assigned budget on physical facilities | Expenditure incurredon maintenance of physical facilites |
|------|------|------|------|
| 17100000 | 16433906 | 30800000 | 38694000 |

### 4.4.2 – Procedures and policies for maintaining and utilizing physical, academic and support facilities - laboratory, library, sports complex, computers, classrooms etc. (maximum 500 words) (information to be available in institutional Website, provide link)

The physical assets of the Institute, such as the buildings, classrooms, electrical power, air condition and landscaping, are all maintained by the Construction and Maintenance Division (CMD) Section. The transport department caters to running and maintaining buses, conveyance light vehicles, and ambulance services. The Purchase and Stores Section takes care of purchase and making inventory by following the approved standard procedures. Library staff manages acquisition of print and electronic resources for the academic and research needs of the academic community. The Computer System Group manages the campus network, servers and other infrastructure and handles computer-related maintenance. Software Support Group (SSG), led by a team of IT professional provides various software services and technical assistance in the institute. The finance and accounts department, with its designated head and staff, cater to the financial aspects of the Institute. The institute has a medical clinic, with round the clock presence of a doctor and nurses to cater to any day-to-day medical requirements/emergencies. With its head (Dean Academics) and support staff, the Academic Section caters to the admission to graduate, postgraduate,

and Ph.D. courses and conduction of examinations, etc. The hostel department maintain the hostels and manage day-to-day activities with its head and associated staff. A food and canteen committee constituted of faculty, students, and the canteen head addresses various food-related details such as the menu, mess timings, etc. A hostel committee constituted of faculty, students, and the hostel head addresses various hostel-related issues such as water supply, pest control in hostels, etc. Several administrative officers cater to the general administration of the Institute, which includes general upkeep and janitorial maintenance of the Institute. The Institute also employs a full-time counselor to guide students and staff of the Institute to achieve their goals. The counselor also addresses mental health issues and workload issues at a very personal level. The sports facilities and activities of the institute are administered through a sports committee consisting of faculty, students, and physical education instructors. Through the help of the instructors, the committee is also responsible for the maintenance and running of the day-to-day sports-related activities of the Institute and conducting the annual sports day. The cultural and other technical activities carried out by students are monitored and guided by a cultural committee similarly. The tech fest Conscientia, and the cultural fest Dhanak of the Institute, is facilitated by this committee. The Students Activities Center (SAC) caters to these requirements. The classrooms, furniture, seminar halls, and other associated accessories such as projectors, etc., are all attached to the respective academic department heads. The laboratories attached to each department come under an identified faculty coordinator/in charge in the department. The purchase and maintenance of the lab equipment, etc., is facilitated through the purchase and stores department. All the research and development activities of the institute are monitored and facilitated by the deans research and development. Computer Systems Group manages and maintains computer systems, networking, and related electronic infrastructure in IIST for provisioning and facilitating IT and non-IT services.

https://www.iist.ac.in/aboutus

## CRITERION V – STUDENT SUPPORT AND PROGRESSION

### 5.1 – Student Support

5.1.1 – Scholarships and Financial Support

|  | Name/Title of the scheme | Number of students | Amount in Rupees |
|---|---|---|---|
| Financial Support from institution | B.Tech Assistanceship | 826 | 38615200 |
| Financial Support from Other Sources |  |  |  |
| a) National | Nil | 0 | 0 |
| b) International | Nil | 0 | 0 |
| View File |  |  |  |

5.1.2 – Number of capability enhancement and development schemes such as Soft skill development, Remedial coaching, Language lab, Bridge courses, Yoga, Meditation, Personal Counselling and Mentoring etc.,

| Name of the capability enhancement scheme | Date of implemetation | Number of students enrolled | Agencies involved |
|---|---|---|---|
| ExoWorlds : Proposed Astronomy Mission | 04/01/2020 | 720 | IIST- University of Cambridge |
| View File |  |  |  |

**5.1.3** – Students benefited by guidance for competitive examinations and career counselling offered by the institution during the year

| Year | Name of the scheme | Number of benefited students for competitive examination | Number of benefited students by career counseling activities | Number of students who have passedin the comp. exam | Number of studentsp placed |
|---|---|---|---|---|---|
| 2019 | Nil | 0 | 0 | 0 | 0 |
| 2020 | Nil | 0 | 0 | 0 | 0 |
| No file uploaded. | | | | | |

**5.1.4** – Institutional mechanism for transparency, timely redressal of student grievances, Prevention of sexual harassment and ragging cases during the year

| Total grievances received | Number of grievances redressed | Avg. number of days for grievance redressal |
|---|---|---|
| 1 | 1 | 90 |

## 5.2 – Student Progression

**5.2.1** – Details of campus placement during the year

| On campus | | | Off campus | | |
|---|---|---|---|---|---|
| Nameof organizations visited | Number of students participated | Number of stduents placed | Nameof organizations visited | Number of students participated | Number of stduents placed |
| Antrix Corporation | 25 | 1 | BPL Medical | 1 | 1 |
| View File | | | | | |

**5.2.2** – Student progression to higher education in percentage during the year

| Year | Number of students enrolling into higher education | Programme graduated from | Depratment graduated from | Name of institution joined | Name of programme admitted to |
|---|---|---|---|---|---|
| 2019 | 3 | PG | Avionics | IISc Banglore, IITB | PhD |
| View File | | | | | |

**5.2.3** – Students qualifying in state/ national/ international level examinations during the year (eg:NET/SET/SLET/GATE/GMAT/CAT/GRE/TOFEL/Civil Services/State Government Services)

| Items | Number of students selected/ qualifying |
|---|---|
| GATE | 30 |
| View File | |

**5.2.4** – Sports and cultural activities / competitions organised at the institution level during the year

| Activity | Level | Number of Participants |
|---|---|---|
| The 2020 edition of Conscientia, IIST?s technological and astronomy fest, was held for three days from 29th | Intra-institute | 400 |

| | |
|---|---|
| Feb to 2nd March 2020. | |

## 5.3 – Student Participation and Activities

5.3.1 – Number of awards/medals for outstanding performance in sports/cultural activities at national/international level (award for a team event should be counted as one)

| Year | Name of the award/medal | National/ Internaional | Number of awards for Sports | Number of awards for Cultural | Student ID number | Name of the student |
|---|---|---|---|---|---|---|
| 2019 | Nil | Nill | Nill | Nill | Nill | Nil |
| 2020 | Nil | Nill | Nill | Nill | Nill | Nil |
| No file uploaded. | | | | | | |

5.3.2 – Activity of Student Council &amp; representation of students on academic &amp; administrative bodies/committees of the institution (maximum 500 words)

IIST Students activities board is the apex body under the chairmanship of Dean Students Activities, for streamlining the student activities of IIST. There are four sub-committees' functions under the Students Activities Board. Sports Committee – One faculty member heads the committee and students nominate one representative each from all batches of undergraduate, post-graduate and doctoral students. This committee oversee the organization of various sports activities, competitions, selection of students for inter-collegiate events, maintaining the sports infrastructure, organization of Institute Gym etc. The committee reports to SAB periodically with its regular reports. Canteen and Hostel Committee – One faculty member heads the committee and students nominate one representative each from all batches of undergraduate, post-graduate and doctoral degree programs. The committee periodically review the canteen and hostel facilities, canteen menu, housekeeping etc with the help of students and suggest adequate measures for improvement and correction. Technical Committee – One faculty member heads the committee and students nominate one representative each from all batches of undergraduate, post-graduate and doctoral degree programs. The committee encourages and initiates student projects in science and technology areas, facilitates and enhances various science and technology activities like innovation centre, technical clubs etc. The committee oversees the organization of IIST Inter-collegiate national student's technical fest named "Conscientia" every year. It also discusses and recommend students for various inter-collegiate events in India and abroad. Cultural Committee – to promote and encourage the cultural and literary activities of students of IIST, a cultural sub-committee has been constituted under the chairmanship of a faculty member and student representatives from various batches. The committee is responsible for organizing annual inter-collegiate National Cultural Fest named "Dhanak" every year. The committee also plans various cultural events, and literary competitions and select best programs / events for inter-collegiate events. Student Clubs: IIST students organizes various clubs named, Quiz Club, Aero Club, Nano-Satellite Club, FOSS Group, Eco Club, Photography Club, Movie and Performing Arts Club, Astronomy Club, Music Club, Model United Nations Club etc. Social outreach clubs like Nirmaan and Panacea are also functioning under student committees. Student Houses: All extracurricular activities are conducted based on various student houses. Student houses are titled as, Akashganga, Devayani, Kritika, Sharmishta, Hamsadhwani etc. Inter-house competitions are conducted for sports, cultural and literary activities. Academic Bodies: Students are members of class committees of each class along with those teachers who take classes during that semester. The class committees meet twice a semester and discuss about the performance of the students and the progress of lectures. Internal Complaints Committee: Internal Complaints Committee (ICC) is re-constituted (Office Order No. 449 dated 05.08.2016) as

under to deal with the complaints relating to Sexual harassment at work place. Three student's nominees are representing different batches in the committee along with few members from faculty and staff of IIST Women Cell: Students are members of the women cell of IIST Anti-Ragging committee: Students are members of the anti-ragging committee of IIST.

## 5.4 – Alumni Engagement

### 5.4.1 – Whether the institution has registered Alumni Association?

No

### 5.4.2 – No. of registered Alumni:

0

### 5.4.3 – Alumni contribution during the year (in Rupees) :

0

### 5.4.4 – Meetings/activities organized by Alumni Association :

Annual Alumni Meet held on 14.09.2019 at the campus. The institute is very young, and the first batch of graduates came out of the institute only in 2011. IIST Alumni is in the process of forming a formal alumni association. IIST Alumni Meet was conducted on the Alumni Day, 14th September, 2019. The date was particularly important due to three major reasons. Firstly, it coincided with the 13th Foundation day of the institute which was started in the year 2007. Moreover, the year 2019 marks the 150th Birth Anniversary of the Father of the Nation, Mahatma Gandhi and 100th Birth Anniversary of the Father of the Indian Space Programme, Dr. Vikram Sarabhai. The meet attracted a good turnout and around 100 alumni gathered for the occasion. An alumni interaction was organized from 10.30 am to 11.30 am, in which the alumni discussed about the mission and purpose of IIST alumni association and the future programs. An interaction session with Wg. Cdr. Rakesh Sharma was arranged from 11.30 am, in which he shared about his experiences of space flight and discussed about future Indian space missions. Chancellor IIST has made a special address to and interaction with alumni from 12 noon to 1.30 pm.

# CRITERION VI – GOVERNANCE, LEADERSHIP AND MANAGEMENT

## 6.1 – Institutional Vision and Leadership

### 6.1.1 – Mention two practices of decentralization and participative management during the last year (maximum 500 words)

The organizational structure of IIST is truly decentralized in nature. The vision of the Indian Institute of Space Science and Technology is to establish a world-class institute offering Space Technology and Space Science educational programs which are integrated with basic and applied research for meeting the requirements of the Indian Space Programme. Research forms a significant part of this vision. The main aim is to seamlessly integrate Research and Development with academics and encourage excellence in the Institutes research activity in areas relevant to space science, space technology and space applications. Towards achieving this Research goal, IIST is creating its own full-fledged infrastructure to develop a vibrant research atmosphere. It is also encouraging and promoting faculty in research activities to offer post-doctoral, doctoral programs and wherever necessary, draw upon research the rich expertise already available with the Indian Space Research Organization. The Director provides overall guidance to academic programs and takes strategic administrative decisions of the institute. The Director sets up necessary committees to conduct academic programs and to get the administrative

activities done. The Academics section of the institute is headed by Dean (Academics). This section undertakes all decisions related to admission of students, preparing the academic calendar, the conduct of exams, publishing of results, convocation-related activities, etc. Dean (RD) is responsible for Research and Development activities at the institute level. Research Council (RC) chaired by Dean (RD) monitors the research progress and other academic matters of Faculty members and research scholars. Technical Review Committee (TRC) has the mandate to review the program of research projects in the institute funded by IIST and other external agencies. Faculty members coming up with project proposals is discussed here. IIST Research Board is formed to enable, promote and nurture innovative research activity meeting the requirements and challenges of the Indian Space Programme. The Dean (Students activities) is responsible for overseeing the activities of students. The institute has many clubs as Aero Club, Avionics club, etc., which this office guides. In addition, this office oversees Conscientia, the annual technology and astronomy festival of the institute. Annual cultural festival Dhanak is also organized by this office. Faculty members who come with innovative technologies are encouraged to apply for patents from Dean (IPR) office. Decentralization of selection of IIST-ISRO projects and decentralization of PhD selection of institute funded research scholars is followed in our institute. All the departments are involved in projects and research of national and international importance. Research in departments is through funded projects by IIST as well as government agencies such as the Department of Science and Technology (DST), apart from the regular Ph.D. programs. IIST funds research projects of the faculty members while encouraging active collaborations with ISRO units and institutes and research laboratories of national importance. The research projects implemented in IIST campus are: (i) IIST Research Projects (i) IIST-ISRO Projects and (ii) IIST Fast-Track Research Projects for newly jointed faculty (iv) Externally Funded Projects and (v) Individual Award/ Scheme Research Funds (INSPIRE Programme, NPDF, Young Scientist Award etc.)

6.1.2 – Does the institution have a Management Information System (MIS)?

Yes

## 6.2 – Strategy Development and Deployment

6.2.1 – Quality improvement strategies adopted by the institution for each of the following (with in 100 words each):

| Strategy Type | Details |
| --- | --- |
| Curriculum Development | Curriculum development in the institute is framed primarily to mould students with sufficient rigor in the fundamentals and also to meet the student skill requirement for research and work in cutting edge technologies. Curriculum development is progressively carried out typically after three years. Every department prepares a curriculum modification/updation incorporating feedbacks from Alumni, reputed Educationalists, and Industry partners. The departmental committee incorporates the suggestion and implementation through discussions in a BoS (Board of Studies). This is discussed and ratified and approved through an academic council. However, periodic inclusion of any specific electives and minor modification are |

| | periodically incorporated into the curriculum through internal departmental discussions and BoS. |
|---|---|
| Teaching and Learning | Students are asked to do term/mini projects as part of the internal assessment in many courses. The term project can be an understanding of a research paper or demonstrating a concept or modelling and simulations or a combination. The term project enables students to get a broader perspective, which helps to look beyond the classroom examples and apply the concepts learned in the course. Students are taken to visit rocket propulsion facilities in ISRO propulsion center Mahendragiri and aerodynamic test facilities such as wind tunnels and shock tunnel facilities in VSSC, Trivandrum to enhance their exposure and knowledge. Due to the pandemic online classes were held using the zoom video platform for conducting classes |
| Admission of Students | A meritocratic admission policy with predefined minimum standards is formulated for admitting students into IIST at UG, PG, Doctorate, Post-Doctorate levels. UG admission: Candidates desiring to obtain admission in IIST should register their application through online portal http://www.admission.iist.ac.in. IIST Admission Rank list will be generated for those candidates who register online for admission to IIST and satisfy all the eligibility criteria as prescribed in the Information Brochure. IIST Admission Rank list is prepared based on their aggregate marks scored in JEE(Advanced) examination. For PG admissions in Engineering/Science departments, a GATE score is mandatory. Applications are shortlisted depending upon the GATE Score and students are admitted based on the interview/rank list. A hybrid policy is followed by respective departments. For engineering/science department's admission to Ph.D. are based on departmental norms/interview. For Humanities Department, admission to Ph.D. are based on score in UGC/JRF score. Admission of post-doctoral studies is purely based on the interview that respective departments hold. |

| Examination and Evaluation | The evaluation is an integral and important part of the teaching-learning process. In IIST the process of continuous assessment is practiced evaluating the scholars. It is done through quizzes, class tests, home assignments taken periodically, and semester work and course project works taken based on the nature of the course. Few courses also take open book examination which allow students to get the practice of referring books and answering. The complete evaluation is purely internal and it is the responsibility of the course teachers teaching the course to evaluate the students perfectly by knowing the students understanding clearly in the topics they taught and to give a fair evaluation. Continuous assessment system for evaluation of students that carries various components like quizzes, assignments, mini-projects and final examination. The unique feature of the evaluation system is that students are allowed to see the evaluated End Semester Answer scripts and if they are not satisfied with the marks or any other manual errors are found the student can contact the faculty members and get it done. So this type of evaluation provides transparency in the evaluation system and reduces the process of revaluation after declaring the results. This is one of the best systems followed in which the students are satisfied with their results and the re-evaluation procedure is avoided. In order to accommodate the pandemic situation, examinations were conducted online using the learning management system (LMS) platform. Also the exam evaluations, weightages were modified to 2 quizzes each of weightage 20, internal assessment 20 and end-semester examination 40. |
|---|---|
| Research and Development | The institute recognizes the importance of research in developing future technologies and applications of space research. IIST encourages all its faculty members to guide and supervise young scholars for the PhD programme as well as for Post-Doctoral programmes. The major theme of our research portfolio is the application of cutting - edge science to generate new technology. The style of research in |

| | |
|---|---|
| | IIST is both theoretical as well as richly experimental, and the institute is setting up state-of-the-art facilities in all departments to support its research activities. The Institute is focused on strong interdisciplinary and collaborative work both within the various departments and across the various centres of ISRO, which will help to generate excellent technologies responding to the need of local, national and global interest. IIST also encourages its faculty to closely collaborate with scientists/engineers from ISRO/DoS through joint research projects funded by the institute and also encourages its faculty to write research proposals for funding from external sources. IIST also has a number of international collaborations, both as MOU at the level of institute and faculty-to-faculty collaboration. 64 research projects were in progress during this period. 4 patent applications were filed by the faculty members. One patent was awarded to faculty member. 20 faculty members went abroad for attending International Conferences. 13 students did their internships at foreign universities. As a milestone in our growth, the Advanced Retarding potential analyser for Ionospheric Studies, ARIS was launched using the PS4 platform by ISRO. This experiment gave very high quality data output and the success boosted the confidence of the students and the faculty to undertake similar missions in the future. IIST also encourages its faculty to closely collaborate with scientists/engineers from ISRO/DoS through joint research projects funded by the institute and also encourages its faculty to write research proposals for funding from external sources. IIST also has a number of international collaborations, both as MOU at the level of institute and faculty-to-faculty collaboration. |
| Library, ICT and Physical Infrastructure / Instrumentation | Library continued to provide ICT enabled services such as library portal, OPAC with self-renewal and suggestion facilities, access to e-books and e-journal databases, plagiarism checking service, graphic designing service, printing and binding. Library continued to provide |

| | |
|---|---|
| | ICT enabled services such as library portal, OPAC with self-renewal and suggestion facilities, access to e-books and e-journal databases, plagiarism checking service, graphic designing service, printing and binding book bank service, book grant management, library portal service, shodhganga co-ordination, Inter library loan, Remote access facility etc. During the reporting period library started the social media pages of the Institute and started posting details of various news / events from the Institute. IIST has registered for the URKUND software. A software - Book Grant Management System - developed in-house to manage the book grant for B Tech students. Library took institutional membership in nearby library. Trial access enabled for many e-resources and Grammarly tool. Resource Awareness Programme given to users on various tools. During the lock down period, library provided similarity checking service, e-access from remote places through IIST Virtual Library, open academic materials were compiled and provided link to users and webinars organised on different topics. Library continued to offer its services after the lock down period by maintaining all Covid - 19 protocols such as social distancing, providing sanitisers, moving print forms to digital forms, drop box for returned books etc. Book bank service, book grant management, library portal service, shodhganga co-ordination, inter library loan, Remote access facility etc., were provided to library users during this period. |
| Human Resource Management | The quality improvement strategies in human resources across the institute are designed to achieve the desired objectives of IIST along with providing quality research output for ISRO and space related activities. Institute has the following in place: Faculty empowerment strategies: All the faculty members of IIST have excellent academic back ground. Faculty members are also having research publication in reputed international journals. Many of them are members and fellows of prestigious academic societies. In addition, the faculty are encouraged to publish in peer reviewed international journals of |

| | |
|---|---|
| | repute. They are amply funded to attend conferences at national and international level. Also faculty are encouraged to do collaboration with leading national and international institutions with the aim that they can become best known in their area of research. Faculty are also encouraged to participate in international collaborative research projects with universities like University of Colarado, University of Singapore, JPL etc. Faculty are also encouraged to purse research through extramural grants available premier academic and research institutes in the country. The faculty of IIST also serve as members of Doctoral committees in premier institutes of county like IITs, NITs etc. They also serve on governance bodes and other statutory bodies of various educational institutions in different capacities. Research grants are also given to faculty to travel to foreign institutions for presenting their research work in international conferences. This provides an opportunity for faculty to interact and present their ideas to their peer groups at international level. Green living campus facilities: The campus at IIST has all facilities for the students that are eco-friendly. The campus has a well-equipped hospital that gives treatment to faculty, staff and students in case of emergencies. The campus is eco-friendly wherever possible. Technologies of biogas. waste utilization, recycling etc., are adopted. Water from rainfall is efficiently harvested. The campuses are equipped with adequate sports and recreation facilities. Faculty promotion policies: A fair and transparent policy for policy promotion of faculties is followed based on merit. Annual Performance Appraisal Report (APAR) is required to be filled in by the faculty in which they are required to record their achievements every year. |
| Industry Interaction / Collaboration | At present the institute is continuing in-house and international collaborative projects, viz., 1. ARIS on the PS4 has been successfully flown 2. In-house IIST small satellite 3. RPA payload for ISROs MOM-2 mission 4. RPA and small satellite payload for |

proposed ISROs Venus Mission 5. Mirror Satellite for Autonomous Assembly of Reconfigurable Space Telescope (AAReST) in collaboration Caltech/JPL, USA and University of Surrey, UK 6. INSPIRE series of satellites starting with InspireSat1 in collaboration with University of Colorado, USA Towards the international collaborative projects IIST has signed, and are in the advanced stage of discussion for entering into, MoUs/Agreements with international partners for carrying out the collaborative projects. IIST has already entered into MoUs with University of Colorado, Boulder, USA, Caltech University, USA, University of Surrey, UK and Nanyang Technical University, Singapore. The Institute is focused on strong interdisciplinary and collaborative work both within the various departments and across the various centres of ISRO, which will help to generate excellent technologies responding to the need of local, national and global interest. The Institute is focused on strong interdisciplinary and collaborative work both within the various departments and across the various centres of ISRO, which will help to generate excellent technologies responding to the need of local, national and global interest. The Placement Cell at IIST continually liaise with industry, RD organizations, and management Institutions, with the vision of Training, Career-Guidance, Internship/Project, and Campus Placements for our post graduate and undergraduate students. The Company/Organization would contact the Placement Office for further details and discussions. In this year, 12 M.Tech students did their project internship in various private companies. 12 M.Tech students were placed in companies.

6.2.2 – Implementation of e-governance in areas of operations:

| E-governace area | Details |
|---|---|
| Administration | COINS - Web interface used previously for smooth administrative management COWAA was updated as COINS. It helps in processes related to Administration, Purchase Stores, Accounts, Finance, Payroll. In recruitment section, online Application Submission for Appointment |

| | |
|---|---|
| | to Short-term Contract Basis/SRF/JRF was incorporated. iCampus - Software to assist academics administration including student- programme details, course registration, faculty allotment, attendance management, feedback entry mark entry, result publishing, grade sheet printing etc. Material Management System – For Stores, Construction and Maintenance Division |
| Student Admission and Support | Admission softwares for Ph.D., M.Tech. and Undergraduate Programmes, Online Counselling Software for Undergraduate Programmes, Absorption counselling software, ID card printing, Academic portal for viewing student academic activities, Alumni, Convocation registration etc. iCampus - Software for attendance marking, mark entry, grade setting, result verification and publishing Academic Portal - Software for student view of academic activities like course registration, attendance, results Thesis Submission and Evaluation Portal - Due to pandemic situation, the thesis submission of Ph.D. students and evaluation of UG/PG projects were made online using this portal. Online Examination - Using the in-house software objective type examination was conducted for few courses |
| Examination | For examination purpose, we have an exclusive software i-campus in our intranet. The marks scored by students in quiz-1, quiz 2, internals, and end-semester exams are entered in icampus software. Examination are managed by the iCampus Software developed in house for attendance marking, mark entry, grade setting, result verification and publishing of results. |
| Planning and Development | In addition to the existing software developed in house, we have developed the following softwares: Thesis Submission and Evaluation Portal - Due to pandemic situation, the thesis submission of Ph.D. students and evaluation of UG/PG projects were made online using this portal with support for r submitting their thesis online for review and evaluation Canteen Booking System – To offer coupon less online booking and cancelation of breakfast/lunch/dinner services anywhere at any time. Medical Record Management System – A systematic record |

| | |
|---|---|
| | keeping of consultation summary and medicine stock. |
| Finance and Accounts | The following softwares are used in IIST for finance and accounts: Tally ERP 9 – This is a standard accounting software used in the Accounts Department for recording day to day transactions and for generation of all related MIS reports. COINS – This is an ERP software developed in-house (ISRO) which enables processing of indents, accounting and budgetary control. [COWAA was updated to COINS]. WINMAN – This is a standard software used for processing and filing of TDS / TCS returns. Public Financial Management System (PFMS) – This is a web-based online software application developed and implemented by the Controller General of Accounts (CGA), Department of Expenditure, Ministry of Finance, Government of India. PFMS provides a real time, reliable and meaningful management information system and an effective decision support system, as part of the Digital India initiative of Government of India. GEM – Government e Marketplace (GeM) is an online platform for public procurement in India. GeM is a contactless, paperless and cashless online marketplace. |

## 6.3 – Faculty Empowerment Strategies

6.3.1 – Teachers provided with financial support to attend conferences / workshops and towards membership fee of professional bodies during the year

| Year | Name of Teacher | Name of conference/ workshop attended for which financial support provided | Name of the professional body for which membership fee is provided | Amount of support |
|---|---|---|---|---|
| 2019 | R V Ramanan | AAS 19-611, 2019 Astrodynamics Specialist conference, Portland, ME, USA | Nil | 0 |
| No file uploaded. | | | | |

6.3.2 – Number of professional development / administrative training programmes organized by the University for teaching and non teaching staff during the year

| Year | Title of the professional development programme organised for teaching staff | Title of the administrative training programme organised for non-teaching | From date | To Date | Number of participants (Teaching staff) | Number of participants (non-teaching staff) |
|---|---|---|---|---|---|---|

| 2019 | Short term course on Control Systems Engineering with MATLAB/SIMULINK | Hindi Workshop for the Assistants, Sr. Assistants, Personal Assistants and contact staff who are employed in clerical works. | 12/12/2019 | 13/12/2019 | 60 | 27 |
|---|---|---|---|---|---|---|

View File

6.3.3 – No. of teachers attending professional development programmes, viz., Orientation Programme, Refresher Course, Short Term Course, Faculty Development Programmes during the year

| Title of the professional development programme | Number of teachers who attended | From Date | To date | Duration |
|---|---|---|---|---|
| Faculty development program on outcome based engineering education and research | 5 | 21/09/2019 | 23/09/2019 | 3 |

View File

6.3.4 – Faculty and Staff recruitment (no. for permanent recruitment):

| Teaching | | Non-teaching | |
|---|---|---|---|
| Permanent | Full Time | Permanent | Full Time |
| 1 | 1 | 0 | 0 |

6.3.5 – Welfare schemes for

| Teaching | Non-teaching | Students |
|---|---|---|
| There are welfare schemes for medical as per the government regulations. Employee including their family is covered under the Contributory Health Services Scheme. Different welfare schemes like VAST, VISWAS, SAFE, Group Insurance, Leave Travel Concession (LTC), Professional Update allowance are available | There are welfare schemes for medical as per the government regulations. Employees including their family is covered under the Contributory Health Services Scheme. Different welfare schemes like VAST, VISWAS, SAFE, Group Insurance, Leave Travel Concession (LTC), Technical Update allowance are available | Medical Insurance, Book grant and Assistantship as per IIST/DOS norms are available for all eligible students. |

| | |
|---|---|
| for teaching members. SAFE (Scheme for Assistance to Families in Exigency) is Vikram A. Sarabhai Trust(VAST) as a welfare measure for the DOS/ISRO community. SAFE is a voluntary, contributory and multi-purpose welfare scheme to provide Financial Assistance in Exigency (FAE) to the beneficiaries. The beneficiaries are the employees (The Contributor) who opt to join this scheme and optionally, their family members (Spouse and Children). The exigencies include: The monthly contribution paid by the employee depends on the type of the scheme they opt for. The exigencies covered include death/permanent disability of contributor, Loss of eyes/limbs of contributor, Loss of salary due to prolonged sickness of contributor, Serious sickness of contributor or family members, Prolonged hospitalization of contributor or family members, Permanent disability of family members, Loss of eyes/limbs of family members. Contributors are also eligible to receive Residual Bonus at the time of superannuation or withdrawal from SAFE. VAST Insurance Scheme Whenever Accident Strikes a voluntary and contributory welfare scheme to provide risk coverage for Death due to Accidents - anytime and anywhere in the world. The scope of coverage, generally includes death | for non-teaching members |

due to road / rail / air accidents, fire accidents, civil commotion, riots, natural calamities, accidents in work spots, etc., and excludes death due to intentional self-inflicted injury, suicide, insanity and natural deaths due to any disease / ailments. The scope of coverage, however, will be as prescribed by the terms and conditions of Group Personal Accident Policy taken with a reputed insurance company to cover to risk of Death due to Accident.

## 6.4 – Financial Management and Resource Mobilization

6.4.1 – Institution conducts internal and external financial audits regularly (with in 100 words each)

IIST conducts statutory financial audit by CAG empanelled Chartered Accountants. Apart from the financial audit, IIST is having regular audit from CAG and also internal audit conducted by the Department of Space.

6.4.2 – Funds / Grants received from management, non-government bodies, individuals, philanthropies during the year(not covered in Criterion III)

| Name of the non government funding agencies /individuals | Funds/ Grnats received in Rs. | Purpose |
|---|---|---|
| Nil | 0 | 0 |
| No file uploaded. | | |

6.4.3 – Total corpus fund generated

| 0 |
|---|

## 6.5 – Internal Quality Assurance System

6.5.1 – Whether Academic and Administrative Audit (AAA) has been done?

| Audit Type | External | | Internal | |
|---|---|---|---|---|
| | Yes/No | Agency | Yes/No | Authority |
| Academic | No | Nill | No | Nill |
| Administrative | Yes | CG | Yes | Department of Space |

6.5.2 – What efforts are made by the University to promote autonomy in the affiliated/constituent colleges? (if applicable)

No. IIST doesnt have any affiliated/constituent colleges.

6.5.3 – Activities and support from the Parent – Teacher Association (at least three)

The institute is fully residential and all academic and administrative matters pertaining to the functioning of the institute are communicated to parents from

| 6.5.4 – Development programmes for support staff (at least three) |
|---|

1. Training on RTI matters by Department of Space held on 19 20 Dec 2019

| 6.5.5 – Post Accreditation initiative(s) (mention at least three) |
|---|

1. Institute implemented additional (Supernumerary) 10 seats for Economically Weaker Section (EWS) for UG and PG admissions. 140 UG seats have become 154 while 90 PG seats (non-sponsored) have become 99 seats. 2. Ratification of CGPA to percentage conversion formula was implemented. 3. Approval for MOOC/NPTEL course conversion formula from percentage to grade was implemented. 4. Ratification of decision not to award 'Grade' to Research Methodology course was taken. 5. Provision of allowing a student with unsatisfactory academic performance to exit the dual degree programme with B.Tech (Engineering Physics) degree. 6. Provision for one extra academic year to complete for M.Tech/Master of Science non-sponsored students who have sought temporary withdrawal after one year beyond three years was decided. 7. Provision for allowing ISRO/DOS sponsored candidates to return to their respective ISRO centers and undertake M.Tech/Master of Science project in a staggered manner was implemented. 8. Provision for allowing M.Sc students to join for Ph.D. programme in Engineering with the requirement of course work being a minimum of 24 credits. 9. Transfer of credits with other institutions within India and abroad was agreed. 10. It was decided to permit and approve PG and Ph.D. students to undergo well-established and international MOOC courses such as Coursera.

### 6.5.6 – Internal Quality Assurance System Details

| a) Submission of Data for AISHE portal | Yes |
|---|---|
| b)Participation in NIRF | Yes |
| c)ISO certification | No |
| d)NBA or any other quality audit | No |

### 6.5.7 – Number of Quality Initiatives undertaken during the year

| Year | Name of quality initiative by IQAC | Date of conducting IQAC | Duration From | Duration To | Number of participants |
|---|---|---|---|---|---|
| 2019 | Nil | Nill | Nill | Nill | 0 |
| 2020 | Nil | Nill | Nill | Nill | 0 |
| No file uploaded. | | | | | |

## CRITERION VII – INSTITUTIONAL VALUES AND BEST PRACTICES

### 7.1 – Institutional Values and Social Responsibilities

7.1.1 – Gender Equity (Number of gender equity promotion programmes organized by the institution during the year)

| Title of the programme | Period from | Period To | Number of Participants | |
|---|---|---|---|---|
| | | | Female | Male |
| Gender Sensitization Committee and Internal Complaints Committee | 10/03/2020 | 10/03/2020 | 150 | 30 |

| organized International Womens Day celebrations. | | | | |

**7.1.2 – Environmental Consciousness and Sustainability/Alternate Energy initiatives such as:**

| Percentage of power requirement of the University met by the renewable energy sources |
| --- |
| Water treatment plant commissioned in August 2019 and saving Rs. 5.42 lakhs/month on water charges |

**7.1.3 – Differently abled (Divyangjan) friendliness**

| Item facilities | Yes/No | Number of beneficiaries |
| --- | --- | --- |
| Physical facilities | Yes | 12 |
| Provision for lift | Yes | 12 |
| Ramp/Rails | Yes | 12 |
| Braille Software/facilities | No | 0 |
| Rest Rooms | Yes | 12 |
| Scribes for examination | Yes | 0 |
| Special skill development for differently abled students | Yes | 12 |
| Any other similar facility | No | 0 |

**7.1.4 – Inclusion and Situatedness**

| Year | Number of initiatives to address locational advantages and disadvantages | Number of initiatives taken to engage with and contribute to local community | Date | Duration | Name of initiative | Issues addressed | Number of participating students and staff |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 2019 | 1 | 1 | 14/09/2019 | 1 | Donate A Book: A Read Share | Initiative? was organized by IIST, library to support nearby Govt. school / college libraries. | 450 |
| | | | | View File | | | |

**7.1.5 – Human Values and Professional Ethics Code of conduct (handbooks) for various stakeholders**

| Title | Date of publication | Follow up(max 100 words) |
| --- | --- | --- |
| Handbook | 01/07/2019 | A handbook which has |

| | | all rules, regulations, code of conduct, and details of academic programmes are given to the students at the time of counselling. The same is published in IIST website also |
| --- | --- | --- |

**7.1.6 – Activities conducted for promotion of universal Values and Ethics**

| Activity | Duration From | Duration To | Number of participants |
| --- | --- | --- | --- |
| Beach Cleaning Drive helped to promote values of cleanliness and social responsibility | 30/11/2019 | 30/12/2019 | 60 |
| View File | | | |

**7.1.7 – Initiatives taken by the institution to make the campus eco-friendly (at least five)**

• The SwachhtaPakwada 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 flux 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 Kani 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 organized programmes to educate students on Swachh Bharat Abhiyaan • 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.

## 7.2 – Best Practices

**7.2.1 – Describe at least two institutional best practices**

Best Practise - 1 1. Title of the practice: Conduct of seminars on different aspects of Material Sciences 2. The context that required the initiation of the practice (100 – 120 words): The Department of Chemistry has enormous potential to disseminate knowledge in the emerging areas of Materials Science for diverse applications. Being part of a National Institute, by conducting seminars and conferences with a larger collaboration from the peer-community we share the latest information and new skills that we acquire in the course of our research. This provides a win-win situation for both the resource persons and the attendees. 3. Objectives of the practice (50 – 60 words): Seminars and conferences in the Department aim to bring together a bigger scientific community with common academic and research interests and offer an open environment for gaining and sharing knowledge along with practicing professional communication techniques. The main objective of in-house seminars and national as well as international conferences is to impart the following benefits to our students - improving communication skills, gaining expert knowledge, networking with peers, renewing motivation and confidence and ultimately emerging as professionals in the domain. 4. The Practice (250 – 300

words) We conduct weekly announced seminars by research scholars, project students and faculty members of the department. These seminars give intensive exposure to a topic through presentations followed by intense discussions. Hence these seminars provide an ideal opportunity for all the participants to study the topic in depth including the latest research in the field. By asking questions and interacting with the speaker, the seminar would provide a wide range of knowledge in a specific field. The conduct of annual and periodic National and International Conferences is a major highlight of the co-curricular activities organized by the Department. Based on the broad theme of Materials Science and Technology, each segment of the conference will be dedicated to a specific theme to ensure the high impact keynote speakers, researchers and industry partners assemble in a common platform and share a great depth of potential insights. Such interactions with peers provide us with a valuable resource of ideas, recent happenings in the field, best practices, insights and contacts that are essential for career build up and growth. For students, participating in the conference and presenting their work offer huge advantages including the chance to get opinion from experts on early versions of their research work. The preparations and rehearsing for a talk or poster presentation will make the student more comfortable in front of an audience and will contribute significantly to the soft skill development. Networking being an important step for job hunting, the conferences hosting national and international speakers also bring big network benefits. Finally, by conducting these conferences at our campus, we also reach out to the bigger community and invite them to visit our facilities and grow the reputation of the institute. 5. Obstacles faced if any and strategies adopted to overcome them: The obstacle we faced was raising fund, especially for conducting International conferences.We could overcome by receiving fund from both governmental and industries. 6. Impact of the practice (100 – 120 words): Over a period of time, the training from seminars have tremendously contributed to enhance the technical presentation skills in our students. The confidence and the interaction skills have made them outstanding technical presenters as attested by winning several best poster/paper competitions conducted during national/international conferences. The conferences have equipped the faculty and the researchers to stay ahead in the advanced areas of materials research. The linkages that were established during the events have facilitated active collaborations with research groups at the National and International levels. Further, the organizational skills, event management as well as hospitality attributes also were significantly improved in the faculty, students and staff of the department. 7. Resources required: Major resource required for conducting conferences and seminars is the fund. Venue for conducting the conferences, facility for the accommodation of resource persons and participants. Facility for poster presentation, projectors for power point presentation, audio visual facilities, Facility for printing the conference material, etc. Best Practice - 2 1. Title of the practice: Explaining basic optics experiments to nearby rural school children by SPIE and OSA student chapter at IIST 2. The context that required the initiation of the practice (100 – 120 words) The IIST-SPIE (International Society for Optics and Photonics) student chapter was established on 19th April 2013. The IIST-OSA (Optical Society of America) student chapter was established on 3rd November 2017 to promote the knowledge of optics and photonics among school and college students. 3. Objectives of the practice (50 – 60 words) To enlighten the young minds on the entertaining world of optics, SPIE and OSA student chapters at IIST, associated with Applied and Adaptive Optics Laboratory, Department of Physics, organize scientific talks, experimental demonstrations, and outreach programs. Members of the chapters are students of IIST who are interested in optics and carrying out research in optics. 4. The Practice (250 – 300 words) With added Quality Lighting Teaching (QLT) kit from the sponsoring organizations, the members of the chapters help the school children to feel the

various aspects of light unfold right in front of their eyes. 5. Obstacles faced if any, and strategies adopted to overcome them. Communication and presentation are always important aspects when one goes to rural areas. It can do more harm than good if it is not correctly taken care of, especially when the viewers are young children. The student chapter members take special care to describe and convey things in the simplest possible way, preferably in the local language. Members take special care, so visual and interactive communication generates interest in young children. The point is not to teach the science during the outreach programs instead, to present the aspects like a thought-provoking puzzle. 6. Impact of the practice (100 – 120 words) During the IIST annual functions like the open day cultural and science events like Dhanak and Conscientia, the laboratories make arrangements to live demonstrate the optics and related experiments to the visitors with great dedication. These demonstrations are also carried out during the yearly event of IIST @ Schools, inviting more than hundreds of students from all across Kerala. In addition, the members visit the schools in rural areas as part of the outreach activities of the chapter and demonstrate the experiments. The most satisfying feeling is young school childrens joyful and wonder-struck faces at these events. These small actions light up childrens lives and motivate them to take up studies with enthusiasm and seek and carry out research and investigations as they grow up in their lives. 7. Resources required The support from SPIE and OSA and active participation of student members/institute staff and volunteers in organizing events such as lab visits, outreach programs in rural school.

| Upload details of two best practices successfully implemented by the institution as per NAAC format in your institution website, provide the link |
| --- |
| https://www.iist.ac.in/iqac |

## 7.3 – Institutional Distinctiveness

7.3.1 – Provide the details of the performance of the institution in one area distinctive to its vision, priority and thrust in not more than 500 words

The institute as envisioned in its vision documents tries to promote activities to address societal needs so as to create men and women with social responsibility. As part of it different programmes had been organized in the reporting period. NIRMAAN, the social outreach club had selected a VKK government high school, Panacode nearby IIST and offered classes so as to ignite the scientific curiosity among the high school students,. The sessions included explaining the science behind everyday activities, astronomy, optics, rocket science, value education and career guidance. Team Nirmaan celebrated the joyous festival of lights of Diwali with the elderly and children of different institutions. The institutions visited were AshaBhavan for men, a shelter for for the care and protection of mentally cured patients and Saigramam, global village for the orphans managed by the Sathyasai orphanage trust. Sweets, cakes and apples were distributed to the residents. Many of them came forward to sing songs and dance to peppy tracks. iii)– When the floods hit Kerala several flood relief activities were undertaken under the auspice of team NIRMAAN. A collection drive was organised and almost fifty thousand rupees was collected in a very short period of time from IISTians. Necessary items such as clothes, sanitary items, food items were transported to various collection points in the city for further transportation and distribution to the affected areas. In collaboration with an NGO from Thiruvananthapuram, Nirmaan took part in a Beach Cleaning drive on 30/11/2019. . Together the members cleared some area of Sanghumugham Beach and collected tons of plastic and other waste. Awareness about the damaging. effects of plastic was also spread in the form of distribution of pamphlets to the local vendors in the beach. An oath was taken to ban the use of single use plastics. Sticking to tradition, Nirmaan hosts a Bi-Annual paper collection drive as part of which

boxes were kept in front of every hostel with the inmates requested to drop off their unwanted books and notebooks for recycling. These boxes were then taken to a second hand book shop and then to a local recycling point in Nedumangad. The money thus received was used for such programmes undertaken by Nirmaan.

| Provide the weblink of the institution |
| --- |
| |

## 8.Future Plans of Actions for Next Academic Year

Due to Covid-19 pandemic situation and the attendant national lockdown as well as intermittent state level lockdown the institute moved completely from the offline mode of teaching to the online mode of teaching. Furthermore, with students no longer in the campus, the offline exams (mid-term Quizzes and end semester examinations) were changed to online examinations using LMS Moodle. For each exam room having about 25 students, one faculty and one tutor were designated to invigilate and oversee smooth conduct of the online examination. A LMS committee was constituted that ensured seamless and smooth conduct of the online examination. Considering the challenges faced while conducting the three-hour offline end semester examination, the online end-semester examinations were held over a two-hour duration and the weightages for each component of the exams were suitably revised for the online exams. Faculty members were suitably briefed to (i) successfully upload the question paper in LMS Moodle, (ii) effectively invigilate during online examination, and (iii) successfully download the answers from LMS Moodle after the examination. Students were thoroughly apprised about the online exams using the LMS Moodle. Also, the PhD Admission test was planned using the Proctored online examination that was of the MCQ type for both non-sponsored as well as sponsored candidates. All viva-voce, seminar presentations and credited project and credited internship evaluations were conducted using the online mode. All PG and PhD admission interviews were conducted using online mode only. Also, the PhD defense with the Indian PhD examiner was conducted in the online mode only. All meetings within the institute were conducted in the online mode only.