



## Yearly Status Report - 2019-2020

### Part A

#### Data of the Institution

##### 1. Name of the Institution

INDIAN INSTITUTE OF SCIENCE

Name of the head of the Institution

Prof. Anurag Kumar

Designation

Director

Does the Institution function from own campus

Yes

Phone no/Alternate Phone no.

08022932222

Mobile no.

9845006755

Registered Email

dean.anf@iisc.ac.in

Alternate Email

office.director@iisc.ac.in

Address

CV Raman Avenue

City/Town

Bengaluru

State/UT

Karnataka

Pincode

560012

## 2. Institutional Status

University	Deemed
Type of Institution	Co-education
Location	Urban
Financial Status	central
Name of the IQAC co-ordinator/Director	Prof. G. Raghuraman
Phone no/Alternate Phone no.	08022932909
Mobile no.	9845182640
Registered Email	chair.scc@iisc.ac.in
Alternate Email	dean.anf@iisc.ac.in

## 3. Website Address

Web-link of the AQAR: (Previous Academic Year)	<a href="https://iisc.ac.in/wp-content/uploads/2023/09/AQAR-2018-19.pdf">https://iisc.ac.in/wp-content/uploads/2023/09/AQAR-2018-19.pdf</a>
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## 4. Whether Academic Calendar prepared during the year

Yes

if yes, whether it is uploaded in the institutional website: Weblink :

<https://iisc.ac.in/wp-content/uploads/2019/11/student-information-handbook-2019-20.pdf>

## 5. Accrediation Details

Cycle	Grade	CGPA	Year of Accrediation	Validity	
				Period From	Period To
1	A++	3.67	2018	26-Sep-2018	25-Sep-2023

## 6. Date of Establishment of IQAC

22-May-1967

## 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
Entrepreneurship, Ethics and Societal Impact	05-Aug-2019 112	29
Technical Writing and Presentation	23-Jan-2019 98	115
One-day symposium themed Collective behaviour	13-Sep-2019 1	34
One day symposium on Animal Signals: Functions and Evolution	12-Dec-2019 1	25
SSCU ALUMNI SYMPOSIUM - 2019	14-Dec-2019 1	27
Mental Health in College Days	12-Jan-2020 1	32
BSSE's 6th Annual Research Symposium	24-Jun-2020 2	36
Pratiksha Trust Symposium on Brain, Computation and Data Science	18-Oct-2019 1	37
EECS Research Symposium	10-Jul-2019 3	39
In-House faculty symposium of the Department of Mathematics, IISc	06-Nov-2019 1	24

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## 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

<b>9. Whether composition of IQAC as per latest NAAC guidelines:</b>	Yes
Upload latest notification of formation of IQAC	<a href="#">View Link</a>
<b>10. Number of IQAC meetings held during the year :</b>	4
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 !!!
<b>11. Whether IQAC received funding from any of the funding agency to support its activities during the year?</b>	No
<b>12. Significant contributions made by IQAC during the current year(maximum five bullets)</b>	
1. Introduced minor in Artificial Intelligence for M.Tech (CN) programme. 2. Merged two M.Tech programmes: i) M.Tech Civil Engineering with major in Structures or Geotech or Water resources and Environmental Engineering and ii) M.Tech in Infrastructure and transportation engineering into one M.Tech course programme with major in Structures or Geotech or Water resources and Environmental Engineering or Transportation Engineering from academic year 2021 to 2022. 3. Revised the curriculum structure for MTech in ESE and MTech in Microelectronics and VLSI programmes. 4. Modified the courses: Robot dynamics and control, and Robot Learning and Control. 5. New course on Polymer Physics introduced.	
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<b>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</b>	
<b>Plan of Action</b>	<b>Achivements/Outcomes</b>
Get feedback from stakeholders and introduce minor in Artificial Intelligence for M.Tech (CN) programme.	Introduced a minor in Artificial Intelligence for M.Tech (CN) programme based on discussion with stakeholders.
Discuss merging of two M.Tech programmes: i) M.Tech Civil Engineering with major in Structures or Geotech or Water resources and Environmental	Merged two M.Tech programmes: i) M.Tech Civil Engineering with major in Structures or Geotech or Water resources and Environmental Engineering and ii)

Engineering and ii) M.Tech in Infrastructure and transportation engineering into M.Tech course programme with major in Structures or Geotech or Water resources and Environmental Engineering or Transportation Engineering from academic year 2021 to 22.	M.Tech in Infrastructure and transportation engineering into M.Tech course program with major in Structures or Geotech or Water resources and Environmental Engineering or Transportation Engineering, from academic year 2021/22 based on the feedback.
Introduce new course Polymer Physics in Solid State Structural Chemistry Unit during Jan - Apr 2020, based on feedback.	Introduced new course Polymer Physics in Solid State Structural Chemistry Unit during Jan - Apr 2020.
Discuss revision of curriculum structure for M.Tech in ESE and M.Tech in Microelectronics and VLSI programme.	Curriculum structure for M.Tech in ESE and M.Tech in Microelectronics and VLSI Programme revised based on feedback received from the stakeholders.

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**14. Whether AQAR was placed before statutory body ?**

**Yes**

Name of Statutory Body	Meeting Date
Senate Curriculum Committee	11-Sep-2023

**15. Whether NAAC/or any other accredited body(s) visited IQAC or interacted with it to assess the functioning ?**

**Yes**

Date of Visit

17-Sep-2018

**16. Whether institutional data submitted to AISHE:**

**Yes**

Year of Submission

2020

Date of Submission

30-Jun-2020

**17. Does the Institution have Management Information System ?**

**Yes**

If yes, give a brief description and a list of modules currently operational (maximum 500 words)

Academic Management System (AMS) is an online platform provided by DIGITS, IISc, in order to manage the students' admission and course activities of both UG and PG programmes. The system facilitates the admission processes such as accepting students'

applications along with uploading documents, sending interview letters, and other necessary functionalities of students' admissions. Course activities such as Scheme of Instructions, students' course registration, course dropping, approvals, grade entry, etc. are being done online through AMS. Apart from supporting these core functionalities, AMS also provides various analytical reports to institute's academic section and other departments.

## 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	M.Tech in ESE	Electronic Systems Engineering	02/08/2021
Mtech	M.Tech in Microelectronics and VLSI Programme	ESE and ECE	02/08/2021

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##### 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
Nil	Innovative Product Development and Design Methods	Nil	Nil	01/08/2019
Nil	IoT and Data Science for CleanTech and AgriTech	Nil	Nil	01/08/2019
Nil	Project Management	Nil	Nil	01/08/2019
Nil	Business Analytics with Management Science Models and Methods	Nil	Nil	01/08/2019
Nil	Online Course on Basics of Data Analytics	Nil	Nil	01/08/2019
Nil	Image Processing and Computer Vision	Nil	Nil	01/08/2019
Nil	Reinforcement Learning	Nil	Nil	01/08/2019
Nil	Basics of Machine Learning	Nil	Nil	01/08/2019
Nil	Mathematical Foundations for Machine Learning	Nil	Nil	01/08/2019

Nil

Vibration and Noise Theory and Practice

Nil

Nil

01/08/2019

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**1.2 - Academic Flexibility****1.2.1 - New programmes/courses introduced during the Academic year**

Programme/Course	Programme Specialization	Dates of Introduction

[View Uploaded 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
BSc	UNDER GRADUATE PROGRAMME	01/08/2019
Mtech	PRODUCT DESIGN AND ENGINEERING	01/08/2019
Mtech	MANAGEMENT STUDIES	01/08/2019
Mtech	AEROSPACE ENGINEERING	01/08/2019
Mtech	CHEMICAL ENGINEERING	01/08/2019
Mtech	CIVIL ENGINEERING	01/08/2019
Mtech	COMMUNICATION AND NETWORKS	01/08/2019
Mtech	COMPUTER SCIENCE AND ENGINEERING	01/08/2019
Mtech	CP COMPUTATIONAL AND DATA SCIENCE	01/08/2019
Mtech	EARTH SCIENCES	01/08/2019
Mtech	ELECTRICAL ENGINEERING	01/08/2019
Mtech	ELECTRONIC SYSTEMS ENGINEERING	01/08/2019
Mtech	INSTRUMENTATION AND APPLIED PHYSICS	01/08/2019
Mtech	MATERIALS ENGINEERING	01/08/2019
Mtech	MECHANICAL ENGINEERING	01/08/2019
Mtech	MICROELECTRONICS AND VLSI DESIGN	01/08/2019
Mtech	NANOSCIENCE AND ENGINEERING	01/08/2019
Mtech	SIGNAL PROCESSING	01/08/2019

Mtech	SYSTEMS ENGINEERING	01/08/2019
MSc	POST GRADUATE PROGRAMME	01/08/2019
PhD or DPhil	DOCTORAL PROGRAMME	01/08/2019

### 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
Research Communication	06/08/2019	30

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#### 1.3.2 - Field Projects / Internships under taken during the year

Project/Programme Title	Programme Specialization	No. of students enrolled for Field Projects / Internships

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### 1.4 - Feedback System

#### 1.4.1 - Whether structured feedback received from all the stakeholders.

Students	Yes
Teachers	Nil
Employers	Yes
Alumni	Nil
Parents	Nil

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

##### Feedback Obtained

Students' feedback: We collect students' feedback for each course, wherein students rate the course contents and the course instructor on several aspects. About the course, the following aspects are evaluated: depth of coverage in tests and assignments, novelty, organisation, coverage of contemporary and advanced topics, availability of study material, whether the course is meeting learning expectations, and an overall rating. About the instructor, the following aspects are evaluated: clarity of expression and presentation, motivation, pace of teaching, accessibility outside the class, responsiveness and encouragement to questions, instructor's expertise in the subject, level of preparation for the lectures, relevance of the tests and assignments, their discussion in class, coverage of the subject, and an overall



rating. The course contents feedback given by the students is used by the Department Curriculum Committees to ensure matching with the learning goals. The Institute's Senate Curriculum Committee (also the Institute's IQAC) periodically reviews the courses' contents, level, and approves the examination results. The instructor feedback is shared with the instructor for self-assessment and improvement. The Department Curriculum Committee and the Senate Curriculum Committee share additional feedback as required. Finally, the feedback is also used during the faculty assessment. Employers' feedback: The institute houses an office of career counselling and campus placement. Every company that participates in the campus placement process is invited to complete a survey called Employers' Feedback after the placement process is completed. The feedback is gathered on the technical knowledge, conceptual knowledge, analytical thinking, industry awareness, role clarity, and communication skills of the students, and also the overall placement process. The data analysed is used to guide the students on employers' expectations. Discrepancies in the curricula, if any, are identified and shared with the department curriculum committees for further action.

## 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

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### 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 teaching only UG courses	Number of fulltime teachers available in the institution teaching only PG courses	Number of teachers teaching both UG and PG courses
2019	123	909	0	0	456

### 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
456	33	Nil	42	42	Nil

[View File of ICT Tools and resources](#)

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

At IISc, each department has a mentoring system that is suited for the needs and expectations that are specific to the programme. In general, each student is directly mentored by a (research) supervisor. PhD students are also mentored by a thesis advisory committee, who meet the student at periodic intervals for discussing progress towards achieving thesis objectives. Students can also approach the Departmental Curriculum Committee for any academic related matters. In addition, there are various forums in which students can get guidance and mentoring on matters that pertain to both academics and outside of the academics. For example, each department has a Department Wellness Committee for broader issues pertaining to student wellness. At the institute level, students have access to the Student Advisory Committee/Counsellors who can advise and mentor on matters ranging from student academic progress, peer interactions, faculty student interactions, etc.. Each of these fora organise various events that facilitate interactions among students. Beyond the formal mechanisms, students themselves have built informal peer to peer mentoring systems, with senior students helping the new students. The data given below is for the current year.

Number of students enrolled in the institution	Number of fulltime teachers	Mentor : Mentee Ratio
1032	446	1:2

**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
550	456	94	26	26

**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

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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

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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	461	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)

[https://iisc.ac.in/wp-content/uploads/2019/08/SOI\\_2019.pdf](https://iisc.ac.in/wp-content/uploads/2019/08/SOI_2019.pdf)

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

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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)

<https://iisc.ac.in/wp-content/uploads/2023/09/Section-2.7.1-Student-Survey-19-20-Latest.pdf>

## 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

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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

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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

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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
Industry Affiliate Lecture Series	CeNSE	26/11/2020
Healthcare Innovation: Idea to Clinical Product	Centre for Brain Research	30/08/2019
Future of simulation-based product innovation in a digital world	CeNSE and ME	15/10/2019

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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

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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

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### 3.4 - Research Publications and Awards

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

Name of the Department	Number of PhD's Awarded
Biochemistry	6
Microbiology and Cell Biology	8
Molecular Biophysics Unit	9

Inorganic and Physical Chemistry	10
Organic Chemistry	2
Materials Research Centre	12
Mathematics	1
Centre for High Energy Physics	1
Physics	18
Molecular Reproduction Development and Genetics	3
Centre for Ecological Sciences	8
Solid state and Structural Chemistry Unit	5
Computer Science and Automation	6
Electrical Communication Engineering	10
Mechanical Engineering	11
Electrical Engineering	13
Electronic Systems Engineering	6
Aerospace Engineering	18
Chemical Engineering	5
Civil Engineering	10
Materials Engineering	10
Centre for Product Design and Manufacturing	4
Centre for Earth Sciences	1
Centre for Atmospheric and Oceanic Sciences	3
Centre for Nanoscience and Engineering	16
Management Studies	4
Computational and Data Sciences	2
Instrumentation and Applied Physics	9
Centre for Neuroscience	3
Centre for Biosystems Science and Engineering	3
Interdisciplinary Centre for Energy Research	2
Centre for Sustainable Technologies	1

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)

[View Uploaded File](#)

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

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3.4.4 - Patents published/awarded/applied during the year

Patent Details	Patent status	Patent Number	Date of Award

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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

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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

[View Uploaded File](#)

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

Number of Faculty	International	National	State	Local

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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)

[View File](#)

#### 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

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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

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#### 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

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#### 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 activities	Number of students participated in such activities

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### 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

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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 institution/ industry /research lab with contact details	Duration From	Duration To	Participant

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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

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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
4545	4585

4.1.2 - Details of augmentation in infrastructure facilities during the year

Facilities	Existing or Newly Added
Nil	Existing

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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 partially)	Version	Year of automation
LibSys	Fully	7.0	2019

### 4.2.2 - Library Services

Library Service Type	Existing	Newly Added	Total

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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 & 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

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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	1000	42	0	0	0	42	42	10	0
Added	0	0	0	0	0	0	0	0	0
Total	1000	42	0	0	0	42	42	10	0

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

10 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
DESE NPTEL Studio	<a href="https://nptel.ac.in/courses/108108116">https://nptel.ac.in/courses/108108116</a>
DESE NPTEL Studio	<a href="https://nptel.ac.in/courses/112108285">https://nptel.ac.in/courses/112108285</a>
DESE NPTEL Studio	<a href="https://nptel.ac.in/courses/109108158">https://nptel.ac.in/courses/109108158</a>

DESE NPTEL Studio	<a href="https://nptel.ac.in/courses/127108015">https://nptel.ac.in/courses/127108015</a>
DESE NPTEL Studio	<a href="https://nptel.ac.in/courses/127108016">https://nptel.ac.in/courses/127108016</a>
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DESE NPTEL Studio	<a href="https://nptel.ac.in/courses/108108148">https://nptel.ac.in/courses/108108148</a>
DESE NPTEL Studio	<a href="https://nptel.ac.in/courses/108108147">https://nptel.ac.in/courses/108108147</a>
DESE NPTEL Studio	<a href="https://nptel.ac.in/courses/113108071">https://nptel.ac.in/courses/113108071</a>
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DESE NPTEL Studio	<a href="https://nptel.ac.in/courses/103108162">https://nptel.ac.in/courses/103108162</a>
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DESE NPTEL Studio	<a href="https://nptel.ac.in/courses/102108077">https://nptel.ac.in/courses/102108077</a>
DESE NPTEL Studio	<a href="https://nptel.ac.in/courses/108108157">https://nptel.ac.in/courses/108108157</a>
DESE NPTEL Studio	<a href="https://nptel.ac.in/courses/106106221">https://nptel.ac.in/courses/106106221</a>
DESE NPTEL Studio	<a href="https://nptel.ac.in/courses/102108078">https://nptel.ac.in/courses/102108078</a>

#### 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 incurred on maintenance of physical facilities
4000	3378.39	30000	28574.74

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 Institution has regular maintenance staff to take care of physical, academic, and support facilities. The Institution has Annual Maintenance Contracts (AMCs) to maintain the equipments of the lab, computer hardware and software, studios, and so on. The institution also has dedicated support staff to maintain and troubleshoot electronic equipments. The Institution has a dedicated center for campus management and development (CCMD) that takes care of supervising the civil/electrical works, tendering, and so on. The Institution has a dedicated department called DIGITS (Digital Campus and IT Services) to enable the digitization and maintenance of IT infrastructure of the Institute. The Institution uses e-Samadhan, Government Residential Accommodation Allotments. The allotment is purely based on bookings. The Institution also has Office of Laboratory Safety and Environment Health (OLSEH) to maintain the safety

standards at all the laboratories across the Institution to have hazard free environment. Regular collection of solid wastes, toxic wastes, solvent wastes, radio waste, etc. is done and disposal of the same is done periodically. Sports Complex (Gymkhana) at the institute ensures the involvement of faculty, staff, and students in extracurricular activities which are essential to improve their physical and mental well-being. CCMD is responsible for maintaining the facilities in gymkhana.

<https://iisc.ac.in/wp-content/uploads/2023/09/Section-4.4.2-2019-20.pdf>

## 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	See details in the attached file	Nil	Nil
Financial Support from Other Sources			
a) National	See details in the attached file	Nil	Nil
b) International	See details in the attached file	Nil	Nil

[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 implementation	Number of students enrolled	Agencies involved

[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 passed in the comp. exam	Number of students placed

[View File](#)

#### 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

10

10

4

**5.2 - Student Progression****5.2.1 - Details of campus placement during the year**

On campus			Off campus		
Name of organizations visited	Number of students participated	Number of students placed	Name of organizations visited	Number of students participated	Number of students placed

[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	Department graduated from	Name of institution joined	Name of programme admitted to

[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

No file uploaded.

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

Activity	Level	Number of Participants
SPECTRUM 2019	Intra IISc	925
Pravega 2019	Undergraduate Fest	50000

No file uploaded.

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

The student council plays a crucial role in bridging the communication gap between the student body at IISc and the administration. Its responsibilities include addressing academic and facility related issues that students may face and following up with the administration to ensure their resolution. Additionally, the council actively seeks feedback and suggestions from students to enhance the research environment and improve the students' well-being on campus. Throughout the year, the council organizes various cultural, sports, and tech festivals for the student community. It also holds a general body meeting to update students on its recent activities and address any concerns raised by the students. The council encourages students to showcase their talents during an open mic session. The council is also responsible for the cycle auction, which serves the dual purpose of clearing unused cycles from the campus while also raising funds for various events. With students from diverse cultural backgrounds from across India, the council works in collaboration with various samitis to organize and celebrate festivals that showcase local cultures. The student council is democratically elected by the students and works tirelessly to advocate for their welfare and interests.

#### 5.4 - Alumni Engagement

5.4.1 - Whether the institution has registered Alumni Association?

Yes

Established in 2015, the Office of Development and Alumni Affairs (ODAA) has been the single point of contact for the alumni, corporates, and philanthropists supporting various development initiatives at the Indian Institute of Science. Institute's alumni play a significant role in fundraising, and the institute's engagement with its alumni has been on the rise over the last few years. With continuous support from the alumni, the Institute could initiate a few specific schemes such as the establishment of gold medals for students, scholarships, research awards, support for laptops to students during Covid, tuition fee reimbursements, etc..

5.4.2 - No. of registered Alumni:

5914

5.4.3 - Alumni contribution during the year (in Rupees) :

2000000

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

1. Annual Alumni Reunion 2. 1969 Batch Reunion 3. Integrated Ph.D. Reunion

### **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)**

Decentralisation and participative management in the introduction of new degree programmes: The Senate of the Institute regulates the introduction of new degree programmes at the Institute. Here, we highlight the introduction of the MTech in Artificial Intelligence (AI) programme as evidence of decentralised and participative management. The MTech (AI) programme is jointly offered by four departments from the Division of Electrical, Electronics, and Computer Sciences. A group of faculty members, anticipating the wide impact of AI and ML (machine learning) and recognising the strong need for AI capacity building in India, so that we can become an intellectual force in this emerging domain, came together to conceive the programme and design the curriculum. Many inputs were gathered through consultative discussions. These include - AI should not be an end in itself but a driving force for transformative applications it should be guided by the applications it will impact (health, agriculture, sustainable cities) it should be a joint programme of all the departments in the division, etc.. With these inputs, a curriculum was formulated by the committee and shared with the faculty. Inputs were obtained on willingness to participate in guiding students, teaching courses, and supervising the projects. The feedback was also used to fine-tune the curriculum. A final plan was then presented to the joint (engineering and sciences) faculty of IISc, and then the Senate for final approval. Thus, a transparent and participative approach was followed in the creation of this new programme.

Decentralisation and participative management in outreach for attracting high quality faculty applications: How do we attract the best faculty applications to the Institute, and how do we enable a decentralised and participative approach to the outreach effort? Following an idea that was first implemented in 2010 - a Young Researchers Meet in Mathematics and Computer Science, IISc faculty have been organising similar Young Researchers Meetings since 2018. After six in-person meetings at various venues, IISc switched to online meetings during the COVID-19 pandemic. During the in-person meetings, representatives from various divisions of IISc accompanied the leadership to the venues and interacted live with prospective faculty candidates. The meeting and venue details were widely circulated beforehand and the meetings were open to any interested participant. Additionally, international meetings were also organised to attract best faculty applicants. During international meetings, the delegation took a conscious view of being an ambassador of all Higher Education Institutions in India and not IISc alone, to attract the best candidates to pursue faculty careers in India. An organisational team of faculty and staff circulated a pre-meeting questionnaire and gathered interested potential participants. The live meetings had brief presentations on the research carried out at the Institute which was followed by a Q A session. Several faculty members from the institute contributed to the material in the presentations. After the first meeting, a frequently asked questions (FAQ) and responses to the FAQ were prepared for the benefit of all interested future applicants. The FAQ document was kept updated after subsequent meetings.

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

Partial

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	Several department curriculum committees for department-run programmes and programme curriculum committees for inter- departmental programmes gather feedback and update the curricula based on the feedback. The committees are constantly looking to adapt and modify courses or introduce new courses based on students, academic, and industry feedback.
Teaching and Learning	The feedback from the students has two components. One on course contents and the other on instructors. Both are monitored and used to adapt courses and ultimately lead to better learning outcomes for students. Learning management systems such as Moodle are used for asynchronous learning.
Examination and Evaluation	The Senate curriculum committee reviews, recommends, and standardises examination and evaluation mechanisms. Continuous assessment is carried out through interim examinations with only a portion of the weight given to the final examination. The committee also examines and approves the marks and grades at the end of each term.
Research and Development	IISc faculty engage with the Centre for Scientific and Industrial Consultancy (CSIC), the Centre for Sponsored Schemes and Programmes (CSSP), and the Society for Innovation and Development (SID). These entities facilitate close interaction and collaboration with the stakeholders in the industry, researchers at other institutions, and the government. Translations of research innovations are enabled through Intellectual Property and Technology Licensing (IPTeL) centre of IISc.
Library, ICT and Physical Infrastructure / Instrumentation	The Institute has a Library Committee that oversees the Institute's library needs and provides for them. The Institute uses various enterprise resource platforms for implementation of processes and procedures. The Dean of Planning and Infrastructure anticipates the needs, plans for the required infrastructure, and oversees the implementation. The Institute has several Research Facilities with sophisticated instruments for carrying out advanced research, e.g., X-ray facility, bioimaging facility, cryogenic facility, etc.
Human Resource Management	Human resources unit of the Institute is devoted for the management of human resources in the campus. Periodic internal and external training enables in bringing the best practices from around the world. In addition to programmes enabling excellence in work-related aspects, programmes on wellness and work-life balance are also conducted.

Industry Interaction / Collaboration	The Centre for Scientific and Industrial Consultancy (CSIC) scouts for collaborations with companies and proactively makes matches with faculty expertise. The Society for Innovation and Development (SID) enables research innovation through sponsored projects. The SID also facilitates student and faculty entrepreneurship.
Admission of Students	Admissions administrative unit of the institute handles the admission of students. Admissions are carried out twice a year. Faculty members conduct various outreach activities to advertise the cutting-edge research done to attract the best students to IISc. Faculty members actively participate in the Kishore Vaigyanik Protsahan Yojana (KVPY), Joint Admission test for Masters (JAM), Graduate Aptitude Test in Engineering (GATE), etc. to facilitate admissions to the higher education institutions.

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

E-governance area	Details
Planning and Development	MS Office Suite
Administration	MS Office Suite
Finance and Accounts	MS Office Suite
Student Admission and Support	Admission Management System
Examination	MS Office Suite

### 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

[View File](#)

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 staff	From date	To Date	Number of participants (Teaching staff)	Number of participants (non-teaching staff)



[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

No file uploaded.

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

Teaching		Non-teaching	
Permanent	Full Time	Permanent	Full Time
26	26	10	10

6.3.5 - Welfare schemes for

Teaching	Non-teaching	Students
CPDA - Cumulative Profession Development Allowance, Faculty Club membership, CHSS - Contributory Health Services Scheme	Tata Memorial Club (TMC) membership, SC/ST Association, Ambedkar Jayanti Financial Support, Kannada Sangha, CHSS - Contributory Health Services Scheme, SC/ST Children awards	Gymkhana and Sports Facilities, Medical Benefits

6.4 - Financial Management and Resource Mobilization

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

An Internal Auditor from AG's office, Bangalore, conducts regular financial audits supported by the audit team. In addition, CAG conducts financial audits every year.

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

[View File](#)

6.4.3 - Total corpus fund generated

5650

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	Nil	No	Nil
Administrative	No	Nil	Yes	Administrative Leadership

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

Not Applicable

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

Non Applicable

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

1) Handling Difficult Situations conducted at IISc on 05.02.2020. 2) Managerial Excellence Programme conducted at IIM Kozhikode from 18.11.2019 to 23.11.2019. 3) Reservations In Services conducted at IISc from 03.01.2020 to 04.01.2020. 4) Make an Impact conducted at IISc from 21.10.2019 to 22.10.2019. 5) Workshop on Office Procedure conducted at IISc from 13.12.2019 to 14.12.2019.

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

1. IISc's aspirations are to be in the top 100 institutions in the world within 10 years. We have instituted a data office to systematically assess and evaluate IISc's standing in the international research community, and identify strategies for improvement. 2. The Institute expanded its postdoctoral programme. The Institution of Eminence (IoE) and the C. V. Raman postdoctoral positions were established with the goal of doubling the number of postdoctoral fellows in the next 5-year period. 3. The new Office of Development and Alumni Affairs was established to put in additional efforts to increase the funding from individual donors and from corporate donors through the Corporate Social Responsibility vehicle.

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

[View File](#)

## 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
Anti-Sexual Harassment Workshop	25/02/2020	03/03/2020	15	60

#### 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
All our new constructions are designed to achieve GRIHA 5-star rating. That means 30 percent of power requirements need to be met from renewable sources.

#### 7.1.3 - Differently abled (Divyangjan) friendliness

Item facilities	Yes/No	Number of beneficiaries
Provision for lift	Yes	200
Ramp/Rails	Yes	200
Rest Rooms	Yes	200
Rest Rooms	Yes	200

#### 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

[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)
POLICY ON CONDUCT AND ACADEMIC INTEGRITY FOR STUDENTS	24/07/2019	This Handbook highlights the standard procedures and practices of the Indian Institute of Science for all students enrolling with the Institute for pursuing various courses. All students must know that it is their responsibility to abide by the Code of Ethics and Conduct. The Institute's endeavour, by means of

enforcing this Code is to put in place a Document for all students that is egalitarian, conscientious, effectual and expeditious and to provide a system which promotes student growth through individual and collective responsibility. All students are requested to be familiar with this Code, which can be also be found on the official website of the Institute. The Code holds students (both individuals and groups) responsible for their actions and its consequences. Those who fail to fulfil their responsibilities stand to lose their privileges or have penalties imposed on them.

#### 7.1.6 - Activities conducted for promotion of universal Values and Ethics

Activity	Duration From	Duration To	Number of participants

[View File](#)

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

The following initiatives are being planned: 1. Rooftop Solar: 8 percent of CO2 emissions are expected to reduce due to this. 2. Replacing diesel with PNG: 21 percent of CO2 emissions are expected to reduce from this initiative. 3. Solar panels on the ground (in 1 hectare) in Challakere campus: 7 percent of CO2 emissions are expected to reduce due to this. 4. The total reduction in CO2 emissions: 36 percent.

### 7.2 - Best Practices

#### 7.2.1 - Describe at least two institutional best practices

**Title of the Practice:** Coordinated development **Objective:** At the Institute, the Office of Development and Alumni Affairs has been entrusted with the objective of coordinating all fund- raising activities, and of coordinating and maintaining contact with industry and various agencies for this purpose. **Context:** In early 1990s due to the financial crisis the country faced, the Government of India encouraged the Institutes of higher learning to raise funds from alternate sources such as industry, alumni, and philanthropists. Subsequently, the National Higher Education Mission (Rashtriya Uchchatar Shiksha Abhiyan) document, September 2013, mentions, raising philanthropic funds, donations/grants from private companies/trusts/NRIs, CSR funds as an element of strategy to raise additional resources to supplement Government funding to Institutes of higher learning. The document further mentions: (a) creating enabling conditions to make higher education system robust and useful to attract investments - autonomy (in financial, regulatory, academic and administrative aspects), ensure accountability and governance (b) Fiscal incentives to attract funding (c) Creation of new infrastructure through corporate investments by - (1) setting up of new facilities in existing Institutions such as centres of excellence or technology parks (2) creating new knowledge clusters/hubs and (d) creating new institutes through public, private, and Public-Private Partnership. In the current context, several of the institutes of higher learning have

been declared as Institutes of National Eminence and have been provided by the Government of India with tax breaks for philanthropic funding. Many of these institutes are also exempted from the FCRA act which enables them to receive foreign philanthropic funds. Practice: Keeping these objectives in mind, the council of Indian Institute of Science established the Office of Development and Alumni Affairs (ODAA) in 2015. This office focused on two aspects: (1) establishing a network with industry, philanthropists, and alumni (who serve as ambassadors of the Institute), and (2) identifying the Institute's additional funding requirements. The key elements in establishing the network were: (a) creating a dedicated portal for alumni, who can connect with their alma mater and be fully aware of all the developments (b) creation of a webpage on Institute's portal listing the opportunities for funding by the philanthropists, alumni and corporates, and highlighting the contributions of current donors to the Institute and the impact it made. The recent advances in digital media such as LinkedIn and mailing system were utilized to connect with individuals and corporates. ODAA evaluated all sources of philanthropic funding. The new opportunities available due to the amendment to the Companies Act and the mandatory requirement to do corporate social responsibility (CSR) subject to certain conditions were considered. Annual reports of hundreds of companies were reviewed to know their CSR policies and those that match with the Institute's focus areas. ODAA did an analysis of its alumni and identified a strategy to keep track of IISc alumni, who are small in number but have made outstanding contributions to the country in higher education, space, atomic energy, and defence research. Key alumni and well-wishers were identified to guide ODAA in connecting with corporates and philanthropists. The key element of this strategy was to rely on alumni's time and influence rather than their ability to provide personal funds. ODAA with the help of IISc faculty and administration prepares detailed project proposals and submits them to key corporates for their internal evaluation. The proposals are then followed up till the completion of the process and, if the project is sanctioned, until MOU or a grant letter is signed. Once the fund flow starts, the project is executed by the concerned department/centre/faculty in the Institute. Additionally, ODAA submits periodic progress reports and the utilizations certificates after obtaining them from the execution team and the finance department of the institute. The council of IISc had permitted ODAA to keep 5 funds out of the total funds raised for its sustainability and project management. Evidence of Success: Since establishment, ODAA has raised significant funds at "zero" additional cost to the Institute. Since inception, no funds have been taken from the Institute for fund-raising activities and hence ODAA is a self-sustaining office. This makes it a unique model of fund-raising in the academic world. Furthermore, the office has expanded from 2 to 9 members entirely with internal funds. New infrastructure, womens' hostels, and centres have been established with contributions from corporates and philanthropists. To name a few - new women's hostel (funded by Jindal Aluminium and BPCL), HAL-IISc Skill Development Centre, TCS Smart X hub, and HDFC sustainable technologies skill training centre. Problems Encountered and Resources required: The key challenges faced were: (a) lack of complete data, both of alumni and industry contact persons (b) limitations due to which quick adaptations to the industry best practices took time (c) challenges in execution of the sanctioned projects and ability to meet the timelines and (d) meeting financial reporting timelines. Title of the Practice: Alumni Affairs Objective: An Office of Development and Alumni Affairs (ODAA) has been established at IISc with the following goals: (i) to build a vibrant community of alumni, who seek to help advance the Institute's mission, and (ii) to provide the services and tools required to connect and support the growing IISc alumni community worldwide, keeping them well informed about IISc

news, developments, successes and future plans. Context: Since its founding in 1909, IISc has nurtured and produced the nation's leading scientists and technocrats, who have contributed to the welfare of the nation and the world. In the last century, IISc has produced more than 35,000 graduates in various science and engineering disciplines. These illustrious alumni seek to remain connected and give back to the Institute that provided them with the rich ecosystem in which they were able to thrive. Thus, ODAA was established in 2015 to facilitate this mission. This allows IISc alumni to easily connect, with each other and with the Institute, through a dynamic set of services and tools. Practice: ODAA is the single point of contact for the alumni of IISc. It is the bridge through which former students reach out to their alma mater, and vice versa. The Office keeps the alumni informed of what is happening at the Institute through regular mails and bulletins. It also maintains a dynamic and user-friendly alumni networking portal that allows alumni to connect with each other. The Office is the starting point for alumni with any requests pertaining to IISc. This includes facilitating accommodation and department tours for any alumni who might be visiting the Institute, organising reunions for individual batches who might wish to convene on campus, and other such requests. The Office has also been tasked with issuing digital ID cards to all registered alumni. Proud IISc alumni also wish to display their connection with the Institute. The Office facilitates this by providing them with IISc memorabilia and unique gifts, including historic books, diaries, and even car stickers. The Office also hosts the much-anticipated annual IISc Alumni Reunion, in which hundreds of alumni from around the world gather each year on campus. Work on organising the reunion starts months in advance, with the preparation of promotional materials and the collection of registrations. During the two-day event, alumni are made to feel at home and kept engaged throughout the weekend with special talks, department visits, cultural and sport events. The event also features the bestowing of the prestigious Distinguished Alumnus awards, through which IISc recognises its most illustrious alumni. Importantly, the Office also acts as a fundraising arm. Alumni are encouraged and supported to give back to their alma mater through various creative means, including fellowships, gold medals, and endowments, or by supporting projects and research. Evidence of success: Overall, the Alumni Affairs division of ODAA has seen substantial success since its founding in 2015. The division looks forward to sustained growth, as it continues to serve its role in supporting the Institute in its overall mission. It was only after the setting up of ODAA that the Institute began hosting the Annual Alumni Reunion. The event has steadily grown in participation: The 2018 event saw 333 registrations. ODAA has been able to source alumni contributions to facilitate a number of successful initiatives including: Endowed chair professorships, sponsorship of young investigator research positions, student travel funds for international conferences, Institute gold medals, Masters and PhD fellowships, research awards, tuition fee reimbursements, classroom renovations, research funding for students and faculty, and the creation of an advanced networking portal to connect IISc's alumni worldwide. In the last year alone, ODAA was able to source funding from alumni for more than fifty different projects. Since 2015, a total of at least 42 crores has been raised directly from the alumni. Problems encountered and resources required: While ODAA has been successful so far in fulfilling its mission as stated above, it faces challenges common to any enterprise growing at a similar pace. These include challenges in the areas of efficiency, task automation, project management, and raising the required funds needed to keep pace with the funding requests received from students and faculty.

Upload details of two best practices successfully implemented by the institution as per NAAC format in your institution website, provide the link

<https://iisc.ac.in/wp-content/uploads/2023/09/Section-7.2.1-2019-20.pdf>

### 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

Intertwining Science and Engineering at the Centre for Biosystems Science and Engineering: The Centre for Biosystems Science and Engineering (BSSE) at the Indian Institute of Science was founded on June 4th, 2015. BSSE undertakes research and training in the broad multidisciplinary area of biological systems with equal emphasis on science and engineering, a distinctive vision of IISc, by bringing together biologists, engineers, and those who are trained as bioengineers. The Centre currently has 4 core faculty members, 32 PhD students, and 27 high quality publications. The following are the details of the key research focus areas at the Centre. (1) Systems Biology of Cancer: The aim of this work is to understand the dynamics of Epithelial-Mesenchymal Transition (EMT) and Cancer Stem Cells (CSCs) – the two key drivers of cancer metastasis and therapy resistance. We offered novel insights into how different subsets of CSCs/EMT cells can organise themselves at different locations within a tumor and identified a potential therapeutic target to alleviate tumor progression. (2) Quantitative Cytoskeletal Biology: Mitochondrial dysfunction has been correlated with the progression of several neurodegenerative diseases including Alzheimer's and Parkinson's diseases. Using fission yeast as a simple model system, we discovered that microtubule dynamics dictates the dynamics of the mitochondrial fission and fusion dynamics in cells. This discovery could have important implications in understanding the reversal of neurodegenerative mitochondrial phenotypes by modulating microtubule dynamics. [Mehta, Chacko et al. J. Biol. Chem. (2019)] Mitochondria contain their own DNA, which encode a set of proteins required for mitochondrial functioning. Most mammals inherit all their mitochondrial DNA from their mother in a process termed uniparental/maternal mitochondrial inheritance. In fission yeast, we discovered that mitochondria are also uniparentally inherited by physical segregation of parental mitochondria by anchor proteins present at the cell periphery. (3) Drug Delivery: Polymeric systems, particularly micro- and nano-carriers, have emerged as a promising solution for the targeted delivery of active drugs. Use of particles for delivery offers several advantages. Biologics are protected from the harsh external environment present (immune clearance and enzymatic degradation) during their voyage and increases their bioavailability at the target site. Particles can be designed to target specific sites including organ, cells and intra-cellular targets. For this part of the research, we are particularly interested in applying biomaterial and nano- and microcarrier-based research to bridge the gap between basic biology and clinical therapies by designing polymeric particle-based vehicles to effectively deliver cargo to their target sites. The major focus is to utilise particle technologies to develop engineering platforms for targeted and efficient delivery of therapeutics for treatment of chronic inflammatory diseases such as osteoarthritis and persistent antibiotic resistant bacterial infections such as tuberculosis. (4) Immunoengineering: Research in this area is directed towards the development of drug delivery systems and biomedical implants that have the capacity to modulate inflammatory immune responses with the ultimate goal of treating specific diseases.

Our current focus is on developing strategies to treat complications that arise from type-2 diabetes and characterising the immune micro-environment associated with tumours.

Provide the weblink of the institution

<https://iisc.ac.in>

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

From March 2020, our lives have been dominated by the deadly COVID-19 pandemic that wreaked havoc across the world. Since then, IISc researchers - like our counterparts around the globe - are racing against time to develop solutions to tackle this crisis. Researchers are looking at affordable and diagnostic tests, virus evolutions, host response and treatment approaches, epidemic models, contact tracing apps, vaccines, etc.. We plan to establish a COVID-19 test centre and a facility to evaluate vaccines and antivirals in partnership with government and other partners. IISc collaborated with other Indian institutions to create an online platform called CovidGyan, which continues to provide scientifically validated resources of information for scientists, journalists, and lay people on COVID-19. Classes, interviews, and exams have shifted online. Faculty members and students are adapting to this new mode of teaching. Staff members continue to keep the administration machinery running through the lockdowns. Our frontline workers - doctors, nurses, security personnel, janitorial staff - are toiling round the clock to keep our campus community safe and healthy. Despite the lockdowns and restrictions, attempts will be made to open the campus safely and enable continued-research with safety-related restrictions in place. The COVID-19 crisis is underscoring the importance of investing in interdisciplinary medical research that can drive the development of next-generation healthcare technologies and approaches, so that we can prepare for the pandemics of the future. IISc will leverage its existing strengths in science and engineering and nurture cross-disciplinary partnerships to enable seamless integration of basic sciences, clinical sciences, applied engineering and clinical practice. IISc plans to establish an Artificial Intelligence (AI) and Robotics Technology Park (ARTPARK), an innovation hub that aims to address socio-economic problems using mission mode approaches, and to develop and leverage cutting-edge technology. IISc will also create a Centre of Excellence in Quantum Technology (CEQT) to leverage IISc's inherent strengths in physics, nanotechnology, and computer science. Quantum technology is expected to become one of the most exciting areas of research in the coming years. IISc's Knowledge E-Learning Network (I-KEN) will be set up to provide state-of-the-art e-learning infrastructure that will enable faculty members to create rich multimedia content for online delivery of courses. A new MTech (Online) degree programme is planned for working scientists and professionals in three thrust areas - AI, Data Science and Business Analytics, and Electronics Communications Engineering. As part of the internationalisation effort, IISc will continue its engagement with international universities and explore joint PhD opportunities. While funding from the government continues to remain critical for IISc's operations, support from nongovernment sources has played an important role in the Institute's advancement in the last few years. Endowments and grants from generous donors will not only enable the Institute to modernise its infrastructure and provide enhanced travel and scholarship support for its students, but will also help our faculty members to pursue ground-breaking research. These initiatives will be pursued vigorously in the near future.