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Indian Institute of Space Science and Technology

Thiruvananthapuram 695 547

Department of Earth & Space Sciences

Academic Audit Report

2018-2019

Academic audit committee

Internal members

Sl.No.	Faculty Name	Role
1	**Dr. Rama Rao Nidamanuri, Professor, Earth & Space Sciences**	Chairman
2	**Dr. Deepak Mishra, Professor, Avionics**	Member
3	**Dr. Govindan Kutty M, Associate Professor, Earth & Space Sciences**	Convenor

External members

Sl. No.	Name	Designation	Email	Mobile	Name of the Institute	Role
1	**Prof. B Krishna Mohan**	Professor	bkmohan@csre.iitb.ac.in		IIT Bombay	Member

I Department profile

1	No. of Permanent Faculty Members	14
2	No. of Adjunct Faculty Members	0
3	No. of Contract Faculty Members	0
4	No. of Guest Faculty Members	0

5	No. of Emeritus Professors / Visiting Faculty Members	0
6	No. of Technical Staff / Tutors (Permanent)	0
7	No. of Technical Staff / Tutors (Contract)	3
8	No. of JRFs/ SRF/ JPF (excluding PhD students)	16
9	No. of Project Fellows	0
10	No. of Research Associates	0
11	No. of Post Doctoral Fellows	0

II Details of academic programmes and student strength in numbers

A .Undergraduate/ Dual Degree / Postgraduate programmes

Sl. No.	Programme	Year	Sanctioned strength in the academic year	Student strength in the academic year (At the start of even semester)	Female student strength in the academic year	No. of passed out Students	Pass Percentage
1	Dual Degree: Eng. Physics (B.Tech.)+ Astronomy & Astrophysics(M.Tech.)	IV Year	0	9	5	9	100.00
2	Dual Degree: Eng. Physics (B.Tech.)+ Astronomy & Astrophysics(M.Tech.)	V Year	0	0	0	0	0.00
3	Dual Degree: Eng. Physics (B.Tech.)+ Earth System Science(M.Tech.)	IV Year	0	0	0	0	0.00
4	Dual Degree: Eng. Physics (B.Tech.)+ Earth System Science(M.Tech.)	V Year	0	0	0	0	0.00
5	Dual Degree: Engineering Physics (B.Tech.)+ M.Tech./ Master of Science	I Year	0	0	0	0	0.00
6	Dual Degree: Engineering Physics (B.Tech.)+ M.Tech./ Master of Science	II Year	0	0	0	0	0.00
7	Dual Degree: Engineering Physics (B.Tech.)+ M.Tech./ Master of Science	III Year	0	0	0	0	0.00

8	Master of Science: Astronomy and Astrophysics (Standalone)	I Year	10	3	1	3	100.00
9	Master of Science: Astronomy and Astrophysics (Standalone)	II Year	10	5	3	5	100.00
10	M.Tech.: Earth System Science (Standalone)	I Year	10	3	0	3	100.00
11	M.Tech.: Earth System Science (Standalone)	II Year	10	3	2	3	100.00
12	M.Tech.: Geoinformatics (Standalone)	I Year	10	5	1	5	100.00
13	M.Tech.: Geoinformatics (Standalone)	II Year	10	5	3	5	100.00
Total			60	33	15	33	

B. Details of Student Demand Ratio

Programme	No. of students applied	No. of students admitted	Comments	Suggestions
Dual Degree: Eng. Physics (B.Tech.)+ Astronomy & Astrophysics (M.Tech.)	0	0		
Dual Degree: Eng. Physics (B.Tech.)+ Earth System Science (M.Tech.)	0	0		
Dual Degree: Engineering Physics (B.Tech.)+ M.Tech./ Master of Science	0	0		
Master of Science: Astronomy and Astrophysics (Standalone)	142	3		
M.Tech.: Earth System Science (Standalone)	258	5		
M.Tech.: Geoinformatics (Standalone)	187	8		

C. Doctoral Degree

PhD	During the academic year			Degree awarded
	Sanctioned seats	No. of students admitted	Current student strength	
PART TIME	0	0	0	0
FULL TIME	8	8	15	1
Total	8	8	15	1

III Details of core courses and electives in each programme

Sl. No.	Programme Name	Course code	Course name	Core/ Elective	Credits assigned	As per curriculum revision/ newly added elective course/ syllabus revised

1	Dual Degree: Earth System Science	ESE553	Thesis Phase II	Core	18	
2	Dual Degree: Earth System Science	ESE554	Comprehensive Viva-Voce II	Core	2	
3	Dual Degree: Earth System Science	ESE551	Guided Study	Core	2	
4	Dual Degree: Earth System Science	ESE552	Thesis Phase I	Core	12	
5	Dual Degree: Earth System Science	ESE411	Physical and Dynamical Meteorology	Core	3	
6	Dual Degree: Earth System Science	ESE412	Physical and Dynamical Oceanography	Core	3	
7	Dual Degree: Earth System Science	ESE413	Earth Resources and Tectonic Systems	Core	3	
8	Dual Degree: Earth System Science	ESE414	Atmospheric Radiation and Climate	Core	3	
9	Dual Degree: Earth System Science	ESE415	General Circulation and Monsoon	Core	3	
10	Dual Degree: Earth System Science	ESE431	Observational Techniques Lab	Core	1	
11	Dual Degree: Earth System Science	ESE432	Earth System Science Lab	Core	1	
12	Dual Degree: Earth System Science	ESE461	Numerical Weather Prediction	Elective	3	
13	Dual Degree: Earth System Science	ESE462	Planetary Geosciences	Elective	3	
14	Dual Degree: Earth System Science	ESE463	Aerosol-Cloud-Climate Interaction	Elective	3	
15	Dual Degree: Earth System Science	ESE466	Boundary Layer Meteorology	Elective	3	

16	Dual Degree: Earth System Science	ESG623	Microwave Remote Sensing	Elective	3	
17	Dual Degree: Earth System Science	ESE441	Elective Lab I	Core	1	
18	Dual Degree: Earth System Science	ESE442	Elective Lab II	Core	1	
19	Dual Degree: Earth System Science	ESE451	Seminar I	Core	2	
20	Dual Degree: Astronomy & Astrophysics	ESA553	Thesis Phase II	Core	18	
21	Dual Degree: Astronomy & Astrophysics	ESA551	Guided Study	Core	3	
22	Dual Degree: Astronomy & Astrophysics	ESA552	Thesis Phase I	Core	16	
23	Dual Degree: Astronomy & Astrophysics	ESA411	Astronomical Techniques	Core	3	
24	Dual Degree: Astronomy & Astrophysics	ESA412	Radiation Processes in Astrophysics	Core	3	
25	Dual Degree: Astronomy & Astrophysics	ESA413	Planetary Sciences	Core	3	
26	Dual Degree: Astronomy & Astrophysics	ESA414	Computational Astrophysics	Core	4	
27	Dual Degree: Astronomy & Astrophysics	ESA431	Data Analysis Astronomy Lab	Core	1	
28	Dual Degree: Astronomy & Astrophysics	ESA421	Structure and Evolution of Stars	Core	3	
29	Dual Degree: Astronomy & Astrophysics	ESA422	Galaxies (Structure, Dynamics and Evolution)	Core	3	
30	Dual Degree: Astronomy & Astrophysics	ESA423	Cosmology	Core	3	

31	Dual Degree: Astronomy & Astrophysics	ESA463	High Energy Astrophysics	Elective	3	
32	Dual Degree: Astronomy & Astrophysics	ESA441	Observational Astronomy Lab	Core	2	
33	Dual Degree: Astronomy & Astrophysics	ESA451	Seminar I	Core	2	
34	Dual Degree: Astronomy & Astrophysics	ESA452	Comprehensive Viva-Voce II	Core	2	
35	Dual Degree: Solid State Physics	ESA423	Cosmology	Audited	3	
36	Dual Degree: Engineering Physics	ES322	Introduction to Earth, Atmosphere and Ocean Sciences	Core	3	
37	Dual Degree: Engineering Physics	ES323	Astrophysical Concepts	Core	3	
38	Dual Degree: Engineering Physics	ES361	Introduction to Remote Sensing	Elective	3	
39	Master of Science: Astronomy and Astrophysics	ESA653	Self Study Elective with Seminar	Core	3	
40	Master of Science: Astronomy and Astrophysics	ESA654	Thesis Phase I	Core	16	
41	Master of Science: Astronomy and Astrophysics	ESA655	Thesis Phase II	Core	18	
42	Master of Science: Astronomy and Astrophysics	ESA611	Introduction to Astronomy and Astrophysics	Core	3	
43	Master of Science: Astronomy and Astrophysics	ESA612	Astronomical Techniques	Core	3	
44	Master of Science: Astronomy and Astrophysics	ESA613	Radiation Processes in Astrophysics	Core	3	
45	Master of Science: Astronomy and Astrophysics	ESA614	Computational Astrophysics	Core	4	

46	Master of Science: Astronomy and Astrophysics	ESA615	Planetary Sciences	Core	3	
47	Master of Science: Astronomy and Astrophysics	ESA631	Data Analysis Astronomy Lab	Core	1	
48	Master of Science: Astronomy and Astrophysics	ESA621	Structure and Evolution of Stars	Core	3	
49	Master of Science: Astronomy and Astrophysics	ESA622	Galaxies (Structure, Dynamics and Evolution)	Core	3	
50	Master of Science: Astronomy and Astrophysics	ESA623	Cosmology	Core	3	
51	Master of Science: Astronomy and Astrophysics	ESA663	High Energy Astrophysics	Elective	3	
52	Master of Science: Astronomy and Astrophysics	ESA641	Observational Astronomy Lab	Core	2	
53	Master of Science: Astronomy and Astrophysics	ESA651	Seminar	Core	2	
54	Master of Science: Astronomy and Astrophysics	ESA652	Comprehensive Viva-Voce	Core	2	
55	M.Tech.: Earth System Science	ESE653	Self Study and Seminar	Core	2	
56	M.Tech.: Earth System Science	ESE654	Project Phase - I	Core	12	
57	M.Tech.: Earth System Science	ESE655	Project Phase - II	Core	18	
58	M.Tech.: Earth System Science	ESE611	Physical and Dynamical Meteorology	Core	3	
59	M.Tech.: Earth System Science	ESE612	Physical and Dynamical Oceanography	Core	3	
60	M.Tech.: Earth System Science	ESE613	Earth Resources and Tectonic Systems	Core	3	
61	M.Tech.: Earth System Science	ESE614	Atmospheric Radiation and Climate	Core	3	

62	M.Tech.: Earth System Science	ESE615	General Circulation and Monsoon	Core	3	
63	M.Tech.: Earth System Science	ESE631	Observational Techniques Lab	Core	1	
64	M.Tech.: Earth System Science	ESE632	Earth System Science Lab	Core	1	
65	M.Tech.: Earth System Science	ESE661	Numerical Weather Prediction	Elective	3	
66	M.Tech.: Earth System Science	ESE662	Planetary Geosciences	Elective	3	
67	M.Tech.: Earth System Science	ESE663	Aerosol-Cloud-Climate Interaction	Elective	3	
68	M.Tech.: Earth System Science	ESE666	Boundary Layer Meteorology	Elective	3	
69	M.Tech.: Earth System Science	ESG623	Microwave Remote Sensing	Elective	3	
70	M.Tech.: Earth System Science	ESE641	Elective Lab I	Core	1	
71	M.Tech.: Earth System Science	ESE642	Elective Lab II	Core	1	
72	M.Tech.: Earth System Science	ESE651	Seminar I	Core	2	
73	M.Tech.: Earth System Science	ESE652	Comprehensive Viva Voce	Core	2	
74	M.Tech.: Geoinformatics	ESG661	Pattern Recognition	Elective	3	
75	M.Tech.: Geoinformatics	ESG663	Quantitative Methods in Remote Sensing	Elective	3	
76	M.Tech.: Geoinformatics	ESG651	Dissertation - Phase I	Core	12	
77	M.Tech.: Geoinformatics	ESG652	Seminar I	Core	1	
78	M.Tech.: Geoinformatics	ESG653	Dissertation - Phase II	Core	18	
79	M.Tech.: Geoinformatics	ESG654	Seminar II	Core	1	
80	M.Tech.: Geoinformatics	ESG611	Introduction to Remote Sensing and Image Analysis	Core	3	
81	M.Tech.: Geoinformatics	ESG612	Geographic Information System	Core	3	

82	M.Tech.: Geoinformatics	ESG616	Scientific Computing for Geospatial Data Analysis	Core	2	
83	M.Tech.: Geoinformatics	ESG664	Photogrammetry	Core	3	
84	M.Tech.: Geoinformatics	ESG631	Remote Sensing and Image Analysis Lab	Core	1	
85	M.Tech.: Geoinformatics	ESG632	Geographic Information System Lab	Core	1	
86	M.Tech.: Geoinformatics	ESG633	Photogrammetry Lab	Core	1	
87	M.Tech.: Geoinformatics	ESG634	Scientific Computing for Geospatial Data Analysis Lab	Core	1	
88	M.Tech.: Geoinformatics	ESG623	Microwave Remote Sensing	Elective	3	
89	M.Tech.: Geoinformatics	ESG624	Pattern Recognition and Machine Learning	Core	3	
90	M.Tech.: Geoinformatics	ESG625	Analysis and Modelling of Geospatial Data	Core	3	
91	M.Tech.: Geoinformatics	ESG665	Hyperspectral Image Processing and Analysis	Elective	3	
92	M.Tech.: Geoinformatics	ESG666	Satellite based Positioning and LiDAR Remote Sensing	Elective	3	
93	M.Tech.: Geoinformatics	ESG667	Computer Vision and Advanced Image Processing	Elective	3	
94	M.Tech.: Geoinformatics	ESG668	Remote Sensing and GIS for Environmental and Natural Resource Management	Elective	3	
95	M.Tech.: Geoinformatics	ESG643	Pattern Recognition and Machine Learning Lab	Core	1	

96	M.Tech.: Geoinformatics	ESG644	Analysis and Modelling of Geospatial Data Lab	Core	1	
97	M.Tech.: Geoinformatics	ESG645	Elective lab	Core	1	
98	Ph.D.: Course Work - January	ESG625	Analysis and Geospatial Data	Credited	3	
99	Ph.D.: Course Work - January	ESG668	Remote Sensing & GIS for Environmental and Natural Resource Management	Credited	3	
100	Ph.D.: Course Work - January	ESE663	Aerosol-Cloud-Climate Interaction	Credited	3	
101	Ph.D.: Course Work - January	ESE661	Numerical Weather Prediction	Credited	3	
102	Ph.D.: Course Work - January	ESE666	Boundary Layer Meteorology	Credited	3	
103	Ph.D.: Course Work - January	ESG623	Microwave Remote Sensing	Credited	3	
104	Ph.D.: Course Work - July	ES462	Solid Earth and its Dynamics	Credited	3	
105	Ph.D.: Course Work - July	ESe 662	Planetary Geology	Credited	3	
106	Ph.D.: Course Work - July	ESA621	Structure and Evolution of stars	Credited	3	
107	Ph.D.: Course Work - July	ESA662	Physics of Interstellar and Intergalactic Medium	Credited	2	
108	Ph.D.: Course Work - July	ESA665	Formation of Stars and Planets	Credited	3	
109	Ph.D.: Course Work - July	ESE611	Physical and Dynamical Meteorology	Credited	3	
110	Ph.D.: Course Work - July	ESE612	Physical and Dynamical Oceanography	Credited	3	
111	Ph.D.: Course Work - July	ESE613	Earth Resources and Tectonic Systems	Credited	3	
112	Ph.D.: Course Work - July	ESA612	Astronomical Techniques	Credited	3	

IV Review on Curriculum

Criteria	Reponse	Revision made during this academic year	Comments on curriculum, if any	Suggestions for improvement
Qualitative comment on the content of the curriculum	EXCELLENT	yes	The quantitative overview demonstrates the comprehensive and research-oriented nature of the curriculum, emphasizing a balanced approach between theoretical knowledge, practical skills, and computational techniques.	More computational courses may be included

V Review on Teaching, Learning and Evaluation

Sl. No.	Criteria	Response based on criteria	Comments	Suggestions
1	Any innovative teaching methods/aids adopted?	Yes Problem-Based Learning Research-Integrated Learning	No comments	Interdisciplinary Projects can be included
2	Is any e-learning modules developed?	Yes Virtual mineral identification lab, simulated geological field trips, and online weather monitoring stations.	No comments	No Suggestions
3	**Student evaluation procedure**			

Criteria	Response	Comments	Suggestions
Course evaluation		No comments	No suggestions
Project evaluation		No comments	No comments

4	**Evaluation components**			
Criteria		**Response**	**Comments**	**Suggestions**
Theory		Continuous assesment and end semester exam	No Comments	No Suggestions

	Lab	Continuous assesment and end semester exam Continuous assesment and course project Continuous assesment and end semester exam, Continuous assesment and course project	No Comments	No Suggestions
	Project/ Internship/ Seminar	Mid term evaluaion and final evaluation Final evaluation	No Comments	No Suggestions
5	**Continuous Assessment Components**			
	Theory	Quiz I Quiz II - Assignment, Surprise quiz, Class test	No Comments	No Suggestions
	Lab	Class exercise evaluation End Semester Examination	No Comments	No Suggestions
6	Is there any remedial coaching to support weak performers?	Yes	Individual Tutoring: Personalized one-on-one sessions with instructors or teaching assistants to address specific areas of difficulty. Peer Tutoring Programs: Pairing students with peers who excel in the subject to foster collaborative learning and peer support.	No Suggestions
7	Is academic feedback from students taken regularly?	Yes	No Comments	No Suggestions
8	What are the steps taken based on student's feedback?	Communication with Faculty members: Inform faculty about the feedback received and the steps being taken to address their concerns. Implementation of Changes Put the action plan into effect, making the necessary changes to curriculum, teaching methods, resources, or facilities. Implement solutions such as revised course materials, enhanced support services, or improved classroom technologies.	No Comments	Provide professional development opportunities for faculty based on feedback may be implemeted
9	Is Class committee meetings conducted?	Yes	No Comments	No Suggestions

VI Department faculty credentials

Sl. No.	Criteria	Response	Comments	Suggestions
1	Percentage of faculty with PhD	100	No Comments	No Suggestions
2	No. of journal articles published	26	No Comments	Publication no. may be less and it may be increased. Open access charges may be provided for the Q1 and Q2 journals
3	No. of books published	0	No Comments	No Suggestions
4	No. of book chapters published	1	No Comments	No Suggestions
5	No. of invited talks/ conferences/ workshops attended	30	No Comments	No Suggestions
6	No. of research projects funded by IIST	0	No Comments	No Suggestions
7	No. of research projects funded through ASRG/IIST-ISRO/DoS	4	No Comments	This no. is less and has to be increased
8	No. of externally funded research projects like CSIR, DST, DRDO etc.	4	No Comments	This no. is less and has to be increased
9	No. of patents published/ awarded	0	No Comments	No Suggestions
10	No. of patents filed	0	No Comments	No Suggestions
11	No. of faculty/student awards received	2	No Comments	This no. is less and has to be increased
12	No. of conferences/Workshops/ seminars/Colloquium Organized	1	No Comments	No Suggestions
13	No. of conference paper published	6	No Comments	No Suggestions

14	No. of visits made by the faculty/ student for research collaborations/invited talks/ conferences abroad	4	No Comments	This no. is less and has to be increased
15	No. of Industry collaborative projects	0	No Comments	No Suggestions
16	No. of ISRO mission related projects/ activities	0	No Comments	No Suggestions
17	No. of consultancy services entertained	0	No Comments	Consultancy services needs to encouraged

VIII Details of student co-curricular activities

Criteria	Response	Comments	Suggestions
Whether students are involved in extra curricular & co-curricular activities?	Yes	Astronomy Club, Field trips to geological sites, rock and mineral identification workshops, guest lectures from geologists, and participation in geological surveys.	Participating in competitions focused on solving real-world problems using scientific and technological solutions may be conisdered.
Whether students are doing internship abroad?	Yes Externally sponsored	ANU,Australia Niigata University, Japan	No Suggestions
Whether students are doing internship at national academic institutes / universities?	Yes Externally sponsored Self sponsored	NARL, NRSC, Aries, SPL	More ISRO institutes may be considered
Whether students are doing internship at ISRO/ Industries/ R&D institutes?	No	No Comments	Needs to encouraged
Whether the department conducts outreach programs?	Yes Astronomy and Astrophysics School Geoconnect STORM	Astronomy & Astrophysics school Advanced Remote Sensing Technology:Hyperspectral and LiDAR 11-14 April 2018	More outreach program needs
Whether department has alumni activities?	No	Alumini activities are conducted at the institute level	

IX Details of placement/ higher studies of students

Criteria	UG	PG	PhD	Comments	Suggestions
No. of students placed	0	7	0	No Comments	No Suggestions

No. of students opted for higher studies	0	9	1	No Comments	No Suggestions
No. of students cleared GATE/ SLET/ NET/ CSIR/ UGC/ Others etc.	0	3	0	No Comments	No Suggestions

X Infrastructure in the Department

Sl. No.	Criteria	Response	Comments	Suggestions
1	No. of classrooms	3	No Comments	No Suggestions
2	No. of seminar/ conference rooms	0	No Comments	No Suggestions
3	No. of instruction labs	4	No Comments	No Suggestions
4	No. of research labs	0	No Comments	No Suggestions
5	No. of full-fledged e-learning classrooms	0	No Comments	No Suggestions
6	No. of computing labs	2	No Comments	No Suggestions
7	Is there any lab with potential for centre of excellence?	No	No Comments	No Suggestions
8	Is there any labs sponsored by external agency?	No	No Comments	No Suggestions
9	Inter-disciplinary research facility	No	No Comments	No Suggestions
10	Is there any common amenities like restroom, recreation club, etc.?	2(Rest room),1(Recreation Club)	No Comments	No Suggestions
11	Is there any facilities for differently abled?	Yes Lift,Ramp	No Comments	No Suggestions
12	Is there any Department library?	No	No Comments	No Suggestions

XII Additional Information

1.	Does the curriculum of each programme offered by the department provide the Programme Educational Objectives (PEOs)/Programme Specific Outcomes (PSOs) and Programme Outcomes (POs)?	Yes
2.	Do the courses offered in each programme by the department provide the Course Objectives and Course Outcomes (COs) written in clear terms?	Yes
3.	Give the status of adopting Choice Based Credit System (CBCS) in the programmes offered by the department	Not yet initiated

4.	Give the status of adopting Objective Based Education (OBE) in the programmes offered by the department.	Not yet initiated
5.	Satisfaction level of support of academic, administrative, and other support units of the institution	Excellent
6.	The status of taking feedback from stakeholders and expert groups for revision and design of curriculum of a programme.	Student Faculty Employers Academic Peers
7.	The list of extension programmes conducted by the department	Advanced remote sensing technologies : Hyperspectral and LiDAR 11-14 April 2018,IIST Astronomy and Astrophysics School
8.	List Faculty Development Programme conducted (any programme aiming at updating the knowledge of faculty of the department).	
9.	Does students take projects involving Field work/Survey. If yes, give the list.	Yes, Total:Field Works:19
10.	The List of MoU and MoAs, that are currently operational during the year.	Mangrove and Marine Biodiversity Conservation Foundation,Dr L Gnanappazham,Signed Date:27/03/2018(3 Years) Dr.Anadmayee Tej,University of Cambridge,Signed Date:16/08/2017(extended upto 19/07/2021) Dr.Jagadheep,Max Planck Society,Germany,Signed Date
11.	Detail the mechanism adopted to help academically disadvantaged students to cope with academic requirements	1. Regular meetings with academic advisors to plan course schedules, discuss progress, and address challenges. 2. Support for mental health issues, stress management, and personal problems.
12.	Detail the mechanism adopted to help students who perform very much below the class averages	Same as in point 11
13.	The total grant/revenue generated/received from different agencies by the department conducting research projects/consultancy services during the year.	Total:75.61

14.	The suggestions to improve the efficiency and effectiveness of the IIST system.	1) Industry Partnerships: Develop partnerships with industry leaders to provide internships, mentorship, and real-world project experiences. 2) Alumni Networks: Leverage alumni networks for mentoring, career advice, and networking opportunities.

XIII Strength of the Department (maximum 150 words)

Diverse and Specialized Programs: Offering dual degrees and standalone Master's programs in Earth System Science, Astronomy & Astrophysics, and Geoinformatics, catering to varied interests and career paths within the field. Strong Focus on Research: Emphasizing practical, theoretical, and computational research across disciplines such as Astronomy & Astrophysics, Atmospheric Sciences, Geology, and Remote Sensing. Experienced Faculty: A team of dedicated faculty members with expertise in their respective fields, actively engaged in cutting-edge research and publication. State-of-the-Art Facilities: Access to modern laboratories, observatories, and computational resources supporting advanced research and practical training.

XIV Weakness of the Department (maximum 150 words)

Inadequate laboratory space, research facilities, and classroom infrastructure to support advanced learning and research activities. Few outreach programs to engage with local schools, communities, and the general public to promote Earth and Space Sciences.

XV Challenges (maximum 150 words)

Ensuring access to the latest technological tools and platforms for teaching, research, and data analysis. Establishing and maintaining collaborative relationships with other institutions, research organizations, and industry partners. Ensuring that the curriculum stays current with the latest advancements and trends in Earth System Science, Astronomy & Astrophysics, and Geoinformatics.

XVI Opportunities (maximum 150 words)

Developing new courses and specializations that reflect the latest trends and advancements in Earth and Space Sciences. Establishing robust internship programs with space agencies, research institutes, to provide hands-on experience to the students Conducting research on weather and climate, natural resource management, and sustainability to contribute to global efforts in these areas.

XVII Any other details relevant to the department

Final Recommendations

Conduct periodic reviews of the curriculum to ensure it incorporates the latest scientific advancements and industry trends. Develop interdisciplinary courses that reflect the interconnected nature of modern scientific challenges. Expand tutoring and mentoring programs to provide more comprehensive support for students. Strengthen career guidance, internships, and job placement services to better prepare students for their careers.

On the day of visit, the team verified all the documents and records available in the department and evaluated the academic process. A detailed report of the audit is given above. The report is signed by the following:

Date of visit to the department:

Signature of Committee Members

1 **Dr. Rama Rao Nidamanuri**, Professor, Earth & Space Sciences: .....

2 **Dr. Deepak Mishra**, Professor, Avionics: .....

3 **Dr. Govindan Kutty M**, Associate Professor, Earth & Space Sciences: .....

4 **Prof. B Krishna Mohan**, Professor, IIT Bombay: .....

Approved by,

Dean Academics,
IIST

प्रोफ. कुरुविळा जोसफ़/Prof. Kuruvilla Jos
डीन (शैक्षिणी), आईआईएसटी
Dean (Academics), IIST