भारत सरकार / Government of India
अंतरिक्ष विभाग /Department of Space

भारतीय अंतरिक्ष विज्ञान एवं प्रौद्योगिकी संस्थान
INDIAN INSTITUTE OF SPACE SCIENCE AND TECHNOLOGY
[वि.अ.आयोग अधिनियम 1956 की धारा 3 के अधीन मानित विश्वविद्यालय घोषित]
[Declared as Deemed to be University under Sec. 3 of the UGC Act 1956]
भारत सरकार के अंतरिक्ष विभाग के तहत एक स्वायत्त संस्थान
An Autonomous Institute under Department of Space, Government of India
तिरुवनंतपुरम / Thiruvananthapuram - 695 547

Gender Audit Report

(2019-2023)

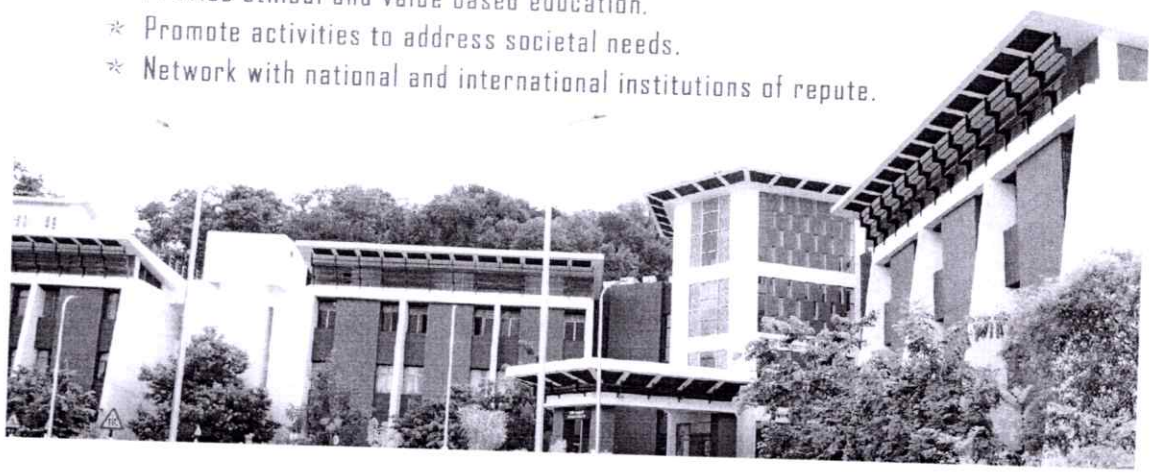
Vision & Mission

Vision

To be a world class educational and research institution contributing significantly to the nation's space endeavours.

Mission

* Create a unique learning environment enriched by the challenges of the space programme.
* Nurture the spirit of innovation and creativity.
* Establish Centers of Excellence in niche areas.
* Provide ethical and value based education.
* Promote activities to address societal needs.
* Network with national and international institutions of repute.



1 ABOUT THE INSTITUTE

Indian Institute of Space Science and Technology (IIST), situated at Thiruvananthapuram, Kerala, is a Deemed to be University under Section 3 of the UGC Act, 1956. IIST, established in 2007, functions as an autonomous institution under the Department of Space (DoS), Government of India. IIST was conceived with a vision to nurture exceptional human resource for the Indian Space Research Organization (ISRO), one of the world's leading scientific organizations engaged in space research and space applications. The institute is the first of its kind in the country to offer high quality education at the undergraduate, graduate, doctoral and post-doctoral levels on areas with special focus on space sciences, space technology and space applications.

Equipped with excellent infrastructure and about 97 highly qualified faculty members, IIST has risen to great heights within a decade of its inception. It is ranked 48th in NIRF and initiatives are planned to further improve the ranking. The Institute has initiated actions for INI Status and is getting ready for NAAC and NBA accreditation. The institute currently offers three undergraduate and fifteen postgraduate programmes that are listed below.

Undergraduate Programmes

- B. Tech in Aerospace Engineering
- B. Tech in Electronics and Communication Engineering (Avionics)
- Dual Degree (B.Tech in Engineering Physics + Master of Science/ M.Tech in one of the following:
    - Master of Science in Astronomy and Astrophysics
    - Master of Science in Solid State Physics
    - M. Tech in Earth System Science
    - M. Tech in Optical Engineering

Postgraduate Programmes

- M.Tech. in Thermal and Propulsion
- M.Tech. in Aerodynamics and Flight Mechanics
- M.Tech. in Structures and Design
- M.Tech. in RF and Microwave Engineering
- M.Tech. in Digital Signal Processing
- M.Tech. in Control System
- M.Tech. in VLSI and Microsystems
- M.Tech. in Power Electronics
- M.Tech. in Materials Science and Technology
- M.Tech. in Earth System Science
- M.Tech. in Geoinformatics
- Master of Science in Astronomy and Astrophysics
- M.Tech. in Machine Learning and Computing
- M.Tech. in Optical Engineering
- M.Tech. in Quantum Technology

In addition, IIST has a vibrant research environment with more than 265 PhD scholars engaged in frontline research areas. The academic programs are formulated to strengthen the fundamentals, provide hands-on experience through practical work, enhance the understanding and expand the boundaries of knowledge in various areas of interest. IIST focuses on inculcating the culture of innovation in students.

All the academic labs in IIST are meticulously designed, with the best experimental set-ups and equipment. IIST has three Centres of Excellence in Advanced Propulsion and Laser Diagnostics, Virtual Reality and Nanoscience & Technology where students involve themselves in various advanced and sophisticated experiments. The many state-of-the-art research laboratories offer a unique learning environment for the students to delve into cutting-edge research.

PREFACE

Women and girls represent half of the world's population and, therefore, also half of its potential. Gender equality, besides being a fundamental human right, is essential to achieve peaceful societies, with full human potential and sustainable development. Moreover, it has been shown that empowering women spurs productivity and economic growth.

Objective of Gender Audit

To study and understand whether the institute has a balanced gender in all departments. Also, to verify whether institute follows the government rules and policies issued for gender equality, women empowerment, women safety, and upgradation in society. Based on the objective, every academic year, the institute Gender Sensitization Committee conducts an internal gender audit on the female-male ratio of students in UG, PG and PhD and faculty and staff of the institute and on the facilities to support gender equality in the campus and to inculcate the young minds and employees with such attitude and approach.

Gender Sensitization Committee

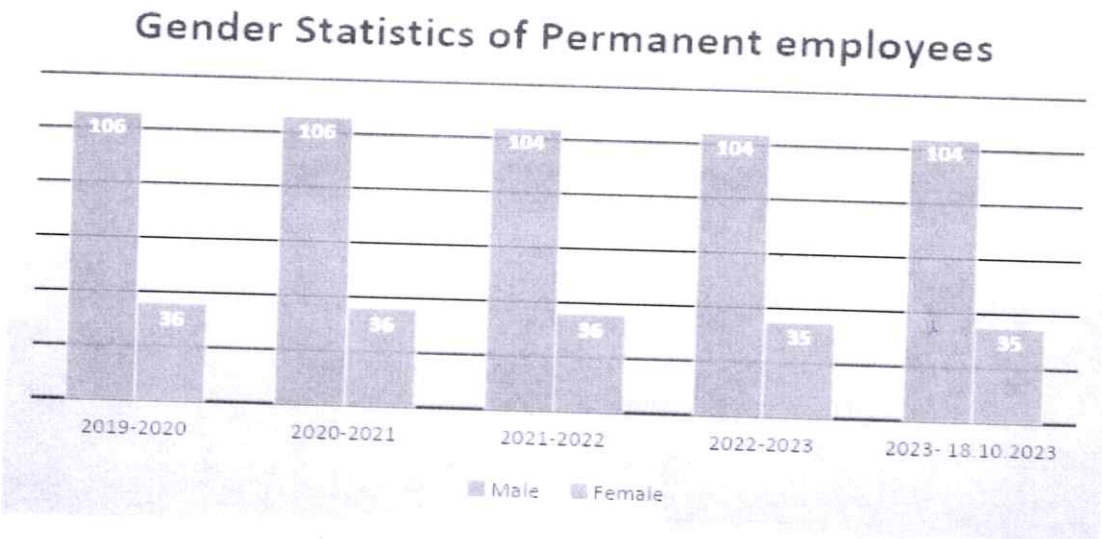
Sl.No	Name	Designation	Role
1	Dr. Nirmala Racheal James	Professor, Dept of Chemistry	Chairperson
2	Dr. Ananadmayee Tej	Senior Professor, Dept of ESS	Member
3	Dr. J.Sheeba Rani	Professor, Dept of Avionics	Member
4	Dr. Gigy J Alex	Associate Professor, Dept of Humanities	Member
5.	Dr. N.Selvaganesan	Professor, Dept of Avionics	Member
6	Dr. Bijudas CR	Associate Professor, Dept of Aerospace	Member
7	Ms. Bindya KR	Deputy Registrar II (Administration)	Member

Details of Gender Audit Statistics taken by the Gender Sensitization Committee

Permanent employees

1. Gender Statistics of Permanent employees

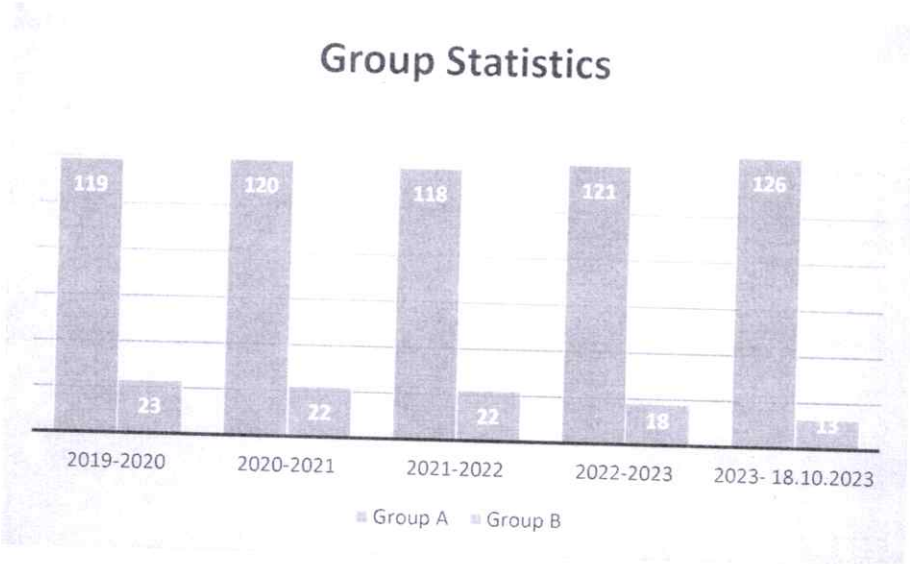
Year	Male	Female	Group A	Group B	Total	% of Female Employees
2019-2020	106	36	**119**	**23**	**142**	**25%**
2020-2021	106	36	**120**	**22**	**142**	**25%**
2021-2022	104	36	**118**	**22**	**140**	**26%**
2022-2023	104	35	**121**	**18**	**139**	**25%**
2023-18.10.2023	104	35	**126**	**13**	**139**	**25%**



The table shows a gender-wise classification of permanent male and female employees. From the chart, it is observed that there were more male employees than female employees during the years 2019-23, and almost the strength of the female employees remain same from the year 2019-2023.

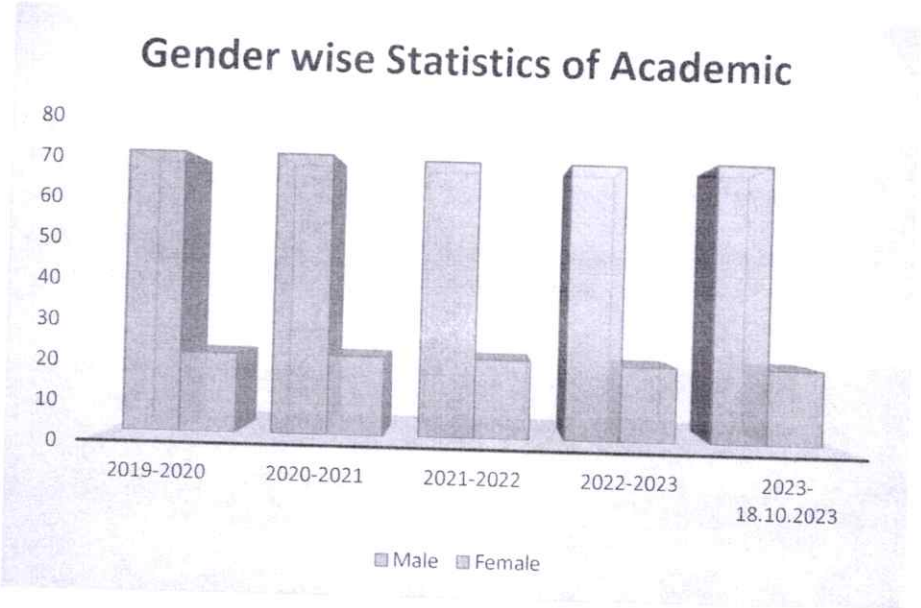
2. Gender Statistics of Employees in Group A and Group B

Year	Group A	Group B
2019-2020	119	23
2020-2021	120	22
2021-2022	118	22
2022-2023	121	18
2023-18.10.2023	126	13

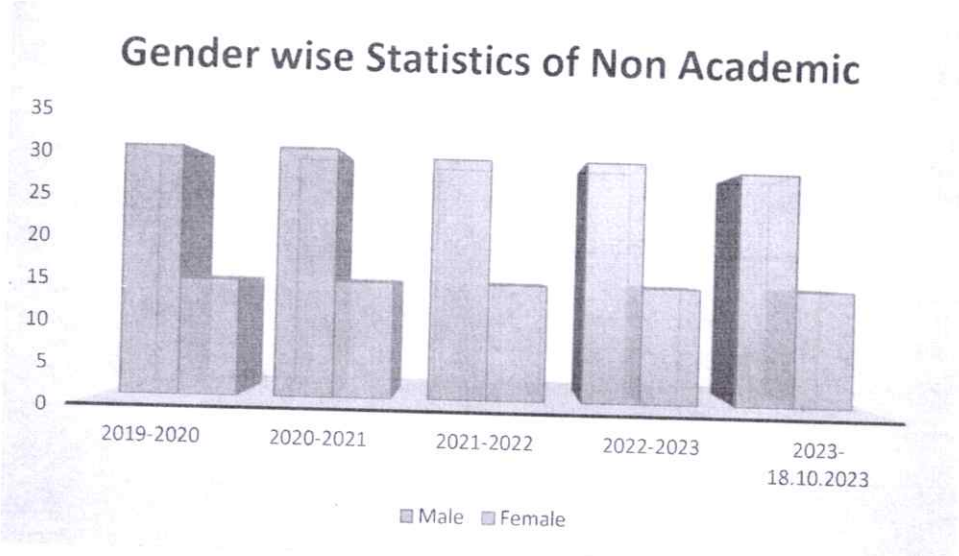


3. Gender wise Statistics of Academic & Non Academic Employees

Year	Academic			Non Academic		
	Male	Female	Total	Male	Female	Total
2019-2020	74	21	95	32	15	47
2020-2021	74	21	95	32	15	47
2021-2022	73	21	94	31	15	46
2022-2023	73	20	93	31	15	46
2023-18.10.2023	74	20	94	30	15	45



Year	Non Academic		
	Male	Female	Total
2019-2020	32	15	**47**
2020-2021	32	15	**47**
2021-2022	31	15	**46**
2022-2023	31	15	**46**
2023-18.10.2023	30	15	**45**



The table shows the gender-wise classification of male and female Academic and Non-Academic Staff. From the bar chart it is observed that more male staff than female staff are working in the institution.

4. Gender Inclusion in Various Top Positions

Gender Inclusion in Various Top Positions

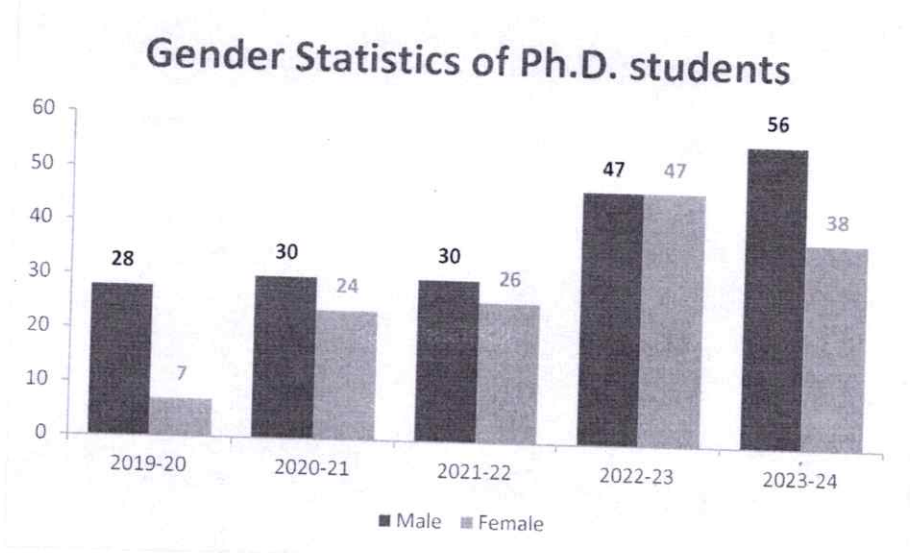
Positions	Year	Male	Female
Dean		4	0
HOD	2019-2020	6	1
	2020-2021	6	1
	2021-2022	6	1
	2022-2023	6	1
Head Administrative divisions	2020-2021	7	1
	2021-2022	7	1
	2022-2023	7	1

The table shows the gender-wise classification of males and females in various top positions. From the graph, it is observed that higher number of male staff than the number of female staff are in top position.

5. Gender balance among Research Scholars working for Ph.D. degrees:

Gender Statistics of Students enrolled in Ph.D. Programme					
	2019-20	2020-21	2021-22	2022-23	2023-24
Male	28	30	30	47	56
Female	7	24	26	47	38

Number of Students currently doing Ph.D.							
	Aerospace	Avionics	Chemistry	ESS	Humanities	Mathematics	Physics
Nos	44	62	26	37	22	21	34

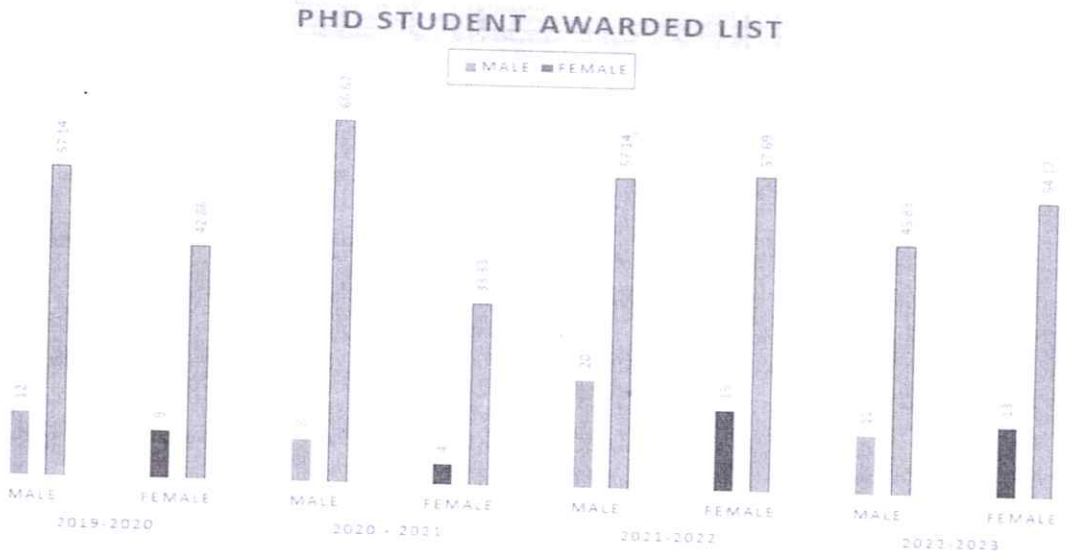


The table shows gender-wise classification of male and female Research scholars. From the graph it is observed that almost equal number of male and female students are pursuing their Ph.D in different subjects in the year 2022-23. The bar graph and tabular form vividly give the idea that strength of female students has increased from 2019 -20 to 2022-23.

Gender Balance in Ph.D. Awardees

PhD Awarded List

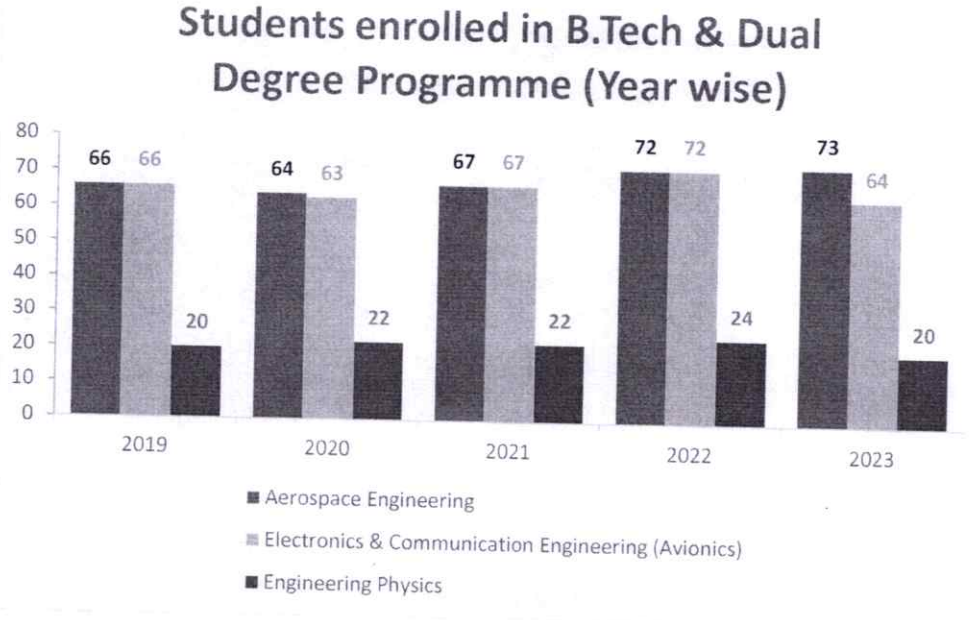
Year	2019-2020		2020 - 2021		2021-2022		2022-2023	
	Male	Female	Male	Female	Male	Female	Male	Female
	12	9	8	4	20	15	11	13
Percentage	57.14	42.86	66.67	33.33	57.14	57.69	45.83	54.17



From the graph it is seen that more number of male candidates compared to female students have been awarded Ph.D. Degree in the year 2019-20, 2020-21, 2021-20 whereas in the year 2022-23 more number of female candidates compared to male students have been awarded Ph.D. Degree.

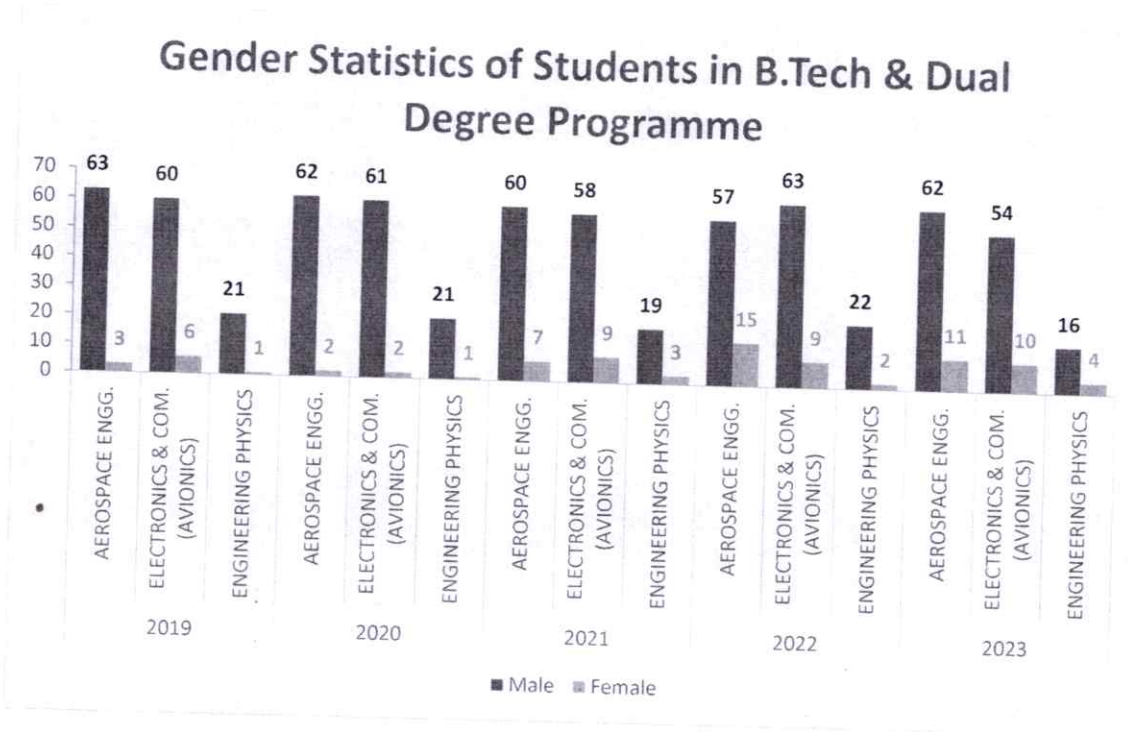
6. Gender balance in Admissions: Degree: UG [Year V/s Gender]

Students enrolled in B.Tech & Dual Degree Programme					
Course	**2019**	**2020**	**2021**	**2022**	**2023**
Aerospace Engineering	66	64	67	72	73
Electronics & Communication Engineering (Avionics)	66	63	67	72	64
Engineering Physics	20	22	22	24	20



Gender Statistics of Students enrolled in B.Tech & Dual Degree Programme						
	2019			2020		
	Aerospace Engg.	**Electronics & Com. (Avionics)**	Engineering Physics	**Aerospace Engg.**	**Electronics & Com. (Avionics)**	Engineering Physics
Male	63	60	21	62	61	21
Female	3	6	1	2	2	1

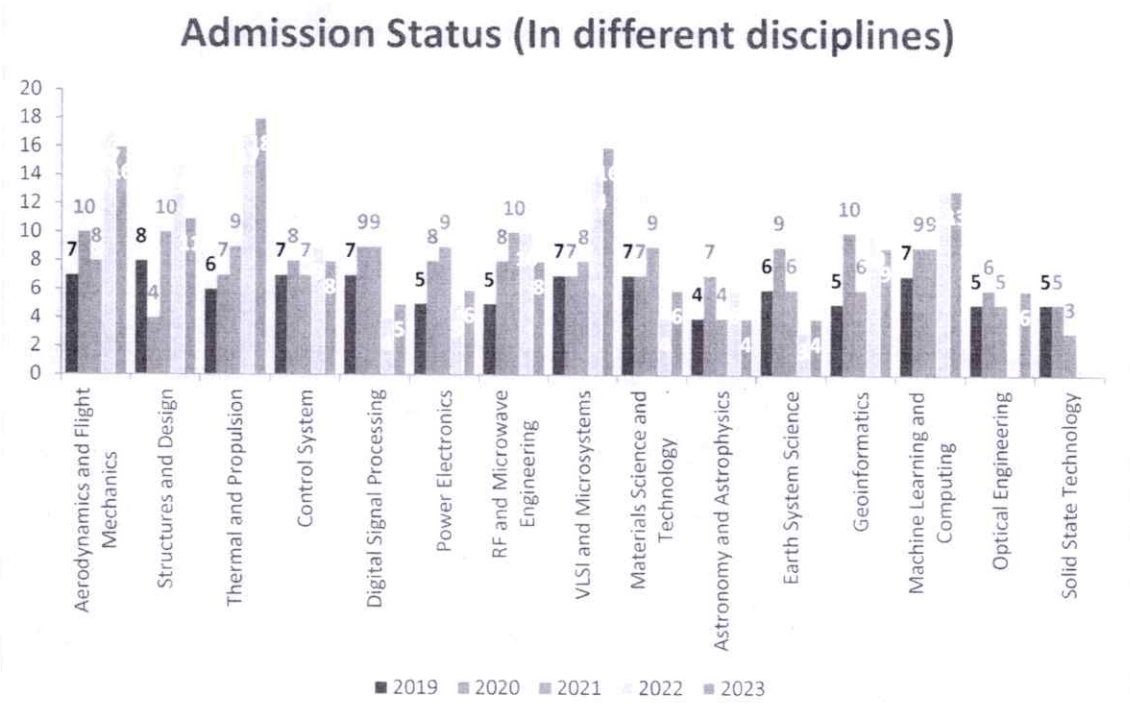
Gender Statistics of Students enrolled in B.Tech & Dual Degree Programme									
	2021			2022			2023		
	Aerospace	ECE	Engg Physics	Aerospace	ECE	Engg Physics	Aerospace	ECE	Engg Physics
Male	60	58	19	57	63	22	62	54	16
Female	7	9	3	15	9	2	11	10	4



The table shows year-wise gender classification of male and female students. It appears that since the years 2019-2023 more number of male students are enrolled in B.Tech & Dual Degree Programme. The bar graph and tabular form vividly give the idea that strength of female students has increased when compared to yester years. The Graph show important data of year-wise gender classification.

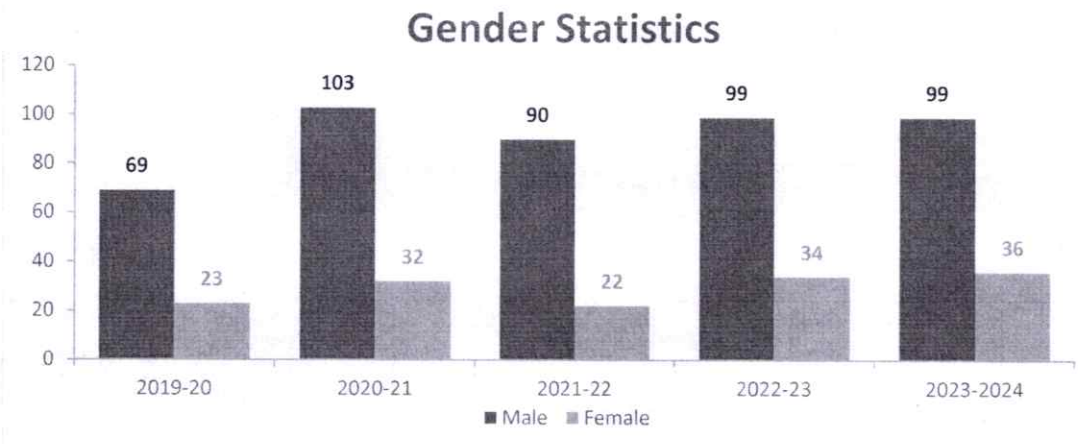
7. Degree: PG [Year vs Gender]

Students enrolled in M.Tech / M.S. Programme					
	2019	2020	2021	2022	2023
Aerodynamics and Flight Mechanics	7	10	8	17	16
Structures and Design	8	4	10	15	11
Thermal and Propulsion	6	7	9	17	18
Control System	7	8	7	9	8
Digital Signal Processing	7	9	9	4	5
Power Electronics	5	8	9	5	6
RF and Microwave Engineering	5	8	10	10	8
VLSI and Microsystems	7	7	8	14	16
Materials Science and Technology	7	7	9	4	6
Astronomy and Astrophysics	4	7	4	6	4
Earth System Science	6	9	6	3	4
Geoinformatics	5	10	6	10	9
Machine Learning and Computing	7	9	9	13	13
Optical Engineering	5	6	5	0	6
Solid State Technology	5	5	3	0	0



Gender Statistics of Students enrolled in M.Tech. / M.S. Programme										
	2019-20		2020-21		2021-22		2022 - 23		2023 - 24	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
M.Tech. / M.S.	69	23	103	32	90	22	99	34	99	36

The table shows year-wise gender classification of the strength of male and female students for PG admission.



From the graph it is observed that more number of male students were admitted to the PG course compared to male students. It is also observed that the ratio of male and female students is increasing.

8. Gender Inclusion in Various Committees

The gender audit committee verified the office orders of various committee constituted by Director for the progress of the institute and found that at least one or two women faculty members, women administrative staff are included and in all student related committees women student members are included without any bias. The audit committee has taken feedback orally from the female scholars who are included in the committee regarding the responsibilities they are given. The responsibilities are gender neutral and based on the interest the students are free to take initiatives and roles.

9. Salient Findings:

1. Among Academic and Non Academic Staff it is observed that more number of male staff than number of female staff are working in the institution and male representation is more than female representation.
2. The admission of male students is more than female students in the Institute.
3. The distribution of research scholars is equal in the year 2022-23.
4. More number of male students have been awarded Ph.D degree compared to female students, in the past 5 years but at present more number of female candidates are enrolled for the Ph.D degree compared to previous years female student ratio.
5. Enrolment of female students have increased in PG Courses. Representation of male students is more in UG course.
6. The participation of male students in cultural activities is higher than female students, but trend shows that the participation of female students in cultural activities is gradually increasing.
7. In brief Male representation is more compared to female representation

10. Suggestions:

The reason behind the higher ratio of male students in space science courses is related to traditional community background and false assumptions that male individuals have more capabilities compared with women.

To address this issue,

1. we should challenge traditional norms and assumptions.
2. provide interactive learning environments that support women to pursue studying space science courses.
3. engage female students in attractive scientific programs that would motivate them to do research.
4. provide supportive inspiration from scientific female role models, encouraging them to pursue Space science courses.
5. Conduct Awareness classes on gender policy for both male and female students.
6. Arrange program for male students on gender issues separately because they need to know how to associate with female co-partner when they are together in laboratories, library, reading room, computer centre etc.
7. Conduct Periodic gender sensitization programs on current issues by experts.

Conclusion:

The analysis shows that gender equity goals and objectives are included in all the policies and programmes of the Institute. The Staff also reported that they have no problems related to gender criterion. Gender Audit Team analysed that the gender equality and gender sensitivity is encouraged by the institute and the employees have gender sensitive behaviour. It is found that the Institute has lots of strengths and some weaknesses. The weaknesses can be overcome with gradual changes in value set up. Doubtless, the enrolment of female students from all section of society is increasing and there are no gender issues or complaints. With strong will power and commitment to gender justice, the Institute would certainly make a mark in the country.

Signature of Committee Members

1. Nirmala Rachel James — 22/11/2023
2. N. Selvageesan — 25/11/2023
3. J. Sheeba Rani
4. Bijudas CR
5. Bindya. K. R
6. A. TEJ