Annual Sustainability Report 2024

Indian Institute of Technology, Roorkee

April 2025

CONTENTS

Annual Sustainability Report
2023-2024
Indian Institute of Technology, Roorkee

1 Settings and Infrastructure:

1.1 Settings and Infrastructure Areas

The Indian Institute of Technology, Roorkee (IITR) is a specialized higher education institution located in India, situated in a tropical wet and dry climate. It comprises three campus sites with a total urban campus area of 1,592,438 sq. m. The ratio of open space to total area is 81.83%. The campus includes 0.08% forest vegetation and 45.03% planted vegetation, with 23.58% of the area dedicated to water absorption.

1.2 Institute Population

For the academic year 2023-2024, the total number of regular students is as follows:

Category	Female	Male	Total
UG	1,102	4,382	5,484
PG	380	1,444	1,824
Ph.D.	1,002	2,067	3,069
Total	**2,484**	**7,893**	**10,377**

Staff details include:

- Faculty: 552
- Visiting/Adjunct Faculty, Emeritus Fellow, Professor of Practice: 77
- Non-Faculty (Group 'A'): 98
- Group B (Technical & Admin) + Group C (Technical & Admin & C-MTS): 533
- Y Pool: 39
- Project Staff: 681
- Agency Manpower: 508

Including families of staff (5,200 members), the total campus population is approximately 18,065. The open space area per person is about 72 sq. m.

1.3 Institute Budget

The institute's budget over the last four fiscal years (in Rs. Lakhs) is summarized below:

Particulars	2020-2021	2021-2022	2022-2023	2023-2024	Average (4 Years)
Capital Creation	13,664.76	18,287.00	19,697.00	18,847.22	17,624.00
Salary	19,023.35	22,251.00	25,759.00	27,911.09	23,736.11
Pension	8,156.62	9,121.00	9,361.00	9,800.96	9,109.90
Non-Salary	8,966.49	10,402.00	14,098.00	14,936.71	12,100.80
Fellowship	6,548.64	7,219.00	7,591.00	7,692.60	7,262.81
HEFA Interest	1,525.64	1,637.00	1,629.00	1,434.73	1,556.59
Total Budget	**57,885.50**	**68,917.00**	**78,135.00**	**80,623.31**	**71,390.20**

1.4 Bio-diversity

IITR's Mini-forests initiative includes a Miyawaki forest (330 sq. m) with 1,200 saplings of 60 species, planted in September 2021.

September 2021 October 2024

A "Biodiversity of an Urban Green Space" report by the Wildlife Institute of India was released on March 11, 2022.

Tree plantation drives under the "MeriLiFE" Mission planted 1,100 saplings in 2023-2024 and 1,500 in 2022-2023, with a 90% survival rate.

On September 24, 2024, NSS IITR, in collaboration with Arsh Yog Jankalyan Trust, planted 100 native species saplings to enhance green cover.

2. Energy and Climate Change

2.1 Energy Efficient Appliances

IITR has increased energy-efficient appliance usage by 20%. Examples include:

S. No.	Name of Appliance		Z-1	Z-2	Z-3	Z-4	SRE	GNEC	Total	%
1	Air-conditioners	Total	IITR Campus (including all buildings)						3516	
		Energy Efficient	IITR Campus (including all buildings)						2733	78 %
2	Fans	Total	5212	1,990	5,366	5999	2272		20839	
		Energy Efficient	1504	272	1571	2269	315		5931	28 %
3	Geysers	Total	153	41	51	211	38		426	
		Energy Efficient	137	9	45	203	18		271	64 %
4	Lighting	Total	13416	4172	15410	14353	5947	2065	55363	
		Energy Efficient	9263	3417	9451	10411	2755	326	35623	64 %
5	Street lighting	Total	448	178	1328	156	179		2289	
		Energy Efficient	270	126	614	146	167		1323	57 %
			30403	**8215**	**28470**	**33748**	**11691**	**2391**	**128314**	
							Grand Total		82433	
							Energy Efficient		45881	
							%		55.66 %	

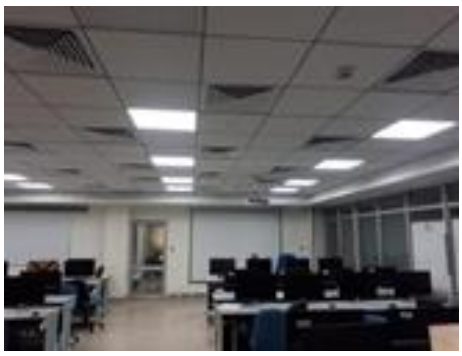
There has been an increase of almost 20% in Energy Efficient appliances as a percentage of total appliances. This shows our commitment to continuous improvement. The following are the continuous steps taken by IIT Roorkee to improve energy efficiency.

Replacement of fluorescent based light fittings by LED Lights in the departments / hostels / lecture halls / residences. Common areas of buildings, a new initiative has been taken to install LED lights having auto-dimming capability. Normally, this LED tube. Light will glow at 3.5 W, but whenever there is a movement of any person it will glow to 18 W.

All the fans being procured and installed are 5-star rated with electronic speed regulator. Also, there are movement sensors-controlled exhaust fans in many washrooms.

All window and split ACs, water coolers etc. being proceeded and installed are 5-star rated.

The survey has been completed in the campus to change all the Non-LED lights into LED lights. The proposal is being sent for approval.







IIT Roorkee has successfully implemented a SCADA-based Smart and Sustainable Campus initiative. The project features a Smart Energy Management System and a micro grid with Battery Energy Storage, supported by an Integrated Monitoring, Analytics, and Control Centre (I-MAC) overseeing energy, transport, water, and waste systems. In every 15 minutes the data has been recorded.

Aligned with UN Sustainable Development Goal 11, the initiative serves as a model for smart and sustainable cities, incorporating an integrated energy and digital platform to enhance energy efficiency, renewable energy usage, and sustainable transport. It also fosters a platform for social innovation, enabling students, researchers, faculty, and industry to engage in R&D on Smart City concepts. The system integrates smart power, energy, environmental monitoring, safety, security, and disaster management components, and is currently operational and functioning effectively. Along with the energy efficiency, smart building measures have also been implemented in IITR. These features are established to generate a beneficial environmental impact over the building lifecycle. The efficiency introduced by the usage of smart appliances in the building(s) has been elaborated below:

No.	Name	Place	automation		safety				energy		water		Indoor environment				lighting				Building Area (m^2)
			B1	B2	S1	S2	S3	S4	E1	E2	A1	A2	I1	I2	I3	I4	L1	L2	L3	L4	
1	Indian Institute of Technology Roorkee Technology Building, Saharanpur Campus	Saharanpur, Uttar Pradesh	x			x	x		x	x			x	x	x		x	x	x	x	7540.00
2	Indian Institute of Technology Roorkee Kasturba Bhawan	Roorkee, Uttarakhand				x	x										x	x	x	x	19656.00

No.	Name	Place	automation		safety				energy		water		Indoor environment				lighting				Building Area (m^2)
			B1	B2	S1	S2	S3	S4	E1	E2	A1	A2	I1	I2	I3	I4	L1	L2	L3	L4	
3	Indian Institute of Technology Roorkee Multi Activity Centre	Roorkee, Uttarakhand				x	x										x	x		x	3360.00
4	Indian Institute of Technology Roorkee Himgiri Apartments	Roorkee, Uttarakhand				x	x										x		x	x	19631.00
5	Indian Institute of Technology Roorkee Shivalik Apartments	Roorkee, Uttarakhand				x	x										x		x	x	6635.00
6	Indian Institute of Technology Roorkee Canal View Apartments	Roorkee, Uttarakhand				x	x										x	x	x	x	12392.00
7	Indian Institute of Technology Roorkee, Hill View Apartments	Roorkee, Uttarakhand				x	x										x	x	x	x	5365.00
8	Indian Institute of Technology Roorkee, Electrical Engineering Department	Roorkee, Uttarakhand				x	x										x	x	x	x	16575.00
9	Indian Institute of Technology Roorkee, Architecture and Planning Department	Roorkee, Uttarakhand				x	x										x	x	x	x	5032.00
10	Indian Institute of Technology Roorkee, Mahatma Gandhi Central Library	Roorkee, Uttarakhand				x	x											x	x	x	9414.00
11	Indian Institute of Technology Roorkee, Biotechnology Department	Roorkee, Uttarakhand				x	x										x	x	x	x	6202.00
12	Indian Institute of Technology Roorkee, CoE in Disaster Mitigation & Management	Roorkee, Uttarakhand				x	x										x	x	x	x	1980.00
13	Indian Institute of Technology Roorkee, Centre for Transportation Systems	Roorkee, Uttarakhand				x	x										x	x	x	x	1310.00
14	Indian Institute of Technology Roorkee, Centre for Nanotechnology	Roorkee, Uttarakhand				x	x										x	x	x	x	1390.00
Total																					**116482**
																					1450798
																					8.02%

The total floor area of smart building to the total all floors building area is about 8.02 %.

2.2 Solar Installations

IIT Roorkee has been a pioneer in utilizing solar energy on an academic campus. It is one of the academic institutions which have the comprehensive rooftop solar energy installation and is an excellent showcase of solar technology for all the students, faculty and visitors. The institute has utilized the rooftop area of every building on campus for solar photovoltaic (PV) and solar thermal applications for hostels and residences. The energy generated by the solar PV system is connected to the campus distribution grid, which supplements electricity requirements of various departments. The solar thermal systems are being used for water heating and cooking. The faculty and students have led successful initiatives for energy conservation and reducing carbon footprint using solar energy.

IIT Roorkee is planning to install rooftop Solar Photovoltaic (PV) systems on all parking area sheds across the campus. The proposal is currently under review and has been submitted for necessary approvals. This initiative aims to further enhance the institute's commitment to renewable energy adoption and sustainable campus development.

The summary of solar installations at IIT Roorkee campus is as follows:

Solar PV system: I

Installed in the year 2014 consists of 27 units of Solar PV systems of various sizes on rooftops of buildings with the total generation capacity of 1.81 MWp.

A 47 kW solar PV system commissioned at Noida Campus of IIT Roorkee in November 2016 on OPEX.

1.0 MW was commissioned in Sept 2021 with a 25-year power purchase agreement with a RESCO company at a tariff of Rs 1.899 per unit.

Thus a total capacity of SPV system in IIT Roorkee in 2.867 MW installed in different years.

Solar Energy Generation with following SPV Systems

1	**1.812 MWp SPV System installed on CAPEX**						
Year	April 2018 to March 2019	April 2019 to March 2020	April 2020 to March 2021	April 2021 to March 2022	April 2022 to March 2023	April 2023 to March 2024	April 2024 to March 2025
kWh	21,33,050	20,89,061	20,34,752	17,69,079	17,83,500	15,09,420	17,12,542
2	**1.0 MWp SPV System installed under RESCO Model**						
Year				July 2021 to March 2022	April 2022 to March 2023	April 2023 to March 2024	April 2024 to March 2025
kWh				8,01,032	13,20,384	12,86,572.4	12,70,691.1

Solar water heating system: It consists of a water heating system covering the entire campus at the students' hostels (Bhawnas), guest houses, residences, and departments. It generates hot water of about 4,61,900 liters per day.

Solar system for steam cooking: It consists of the solar system for steam cooking at nine hostels. It is equivalent to 5000 cylinders of 14.2 kg each LPG annually.

Supervisory control and data acquisition system: All the solar PV systems have SCADA for monitoring and data generation, and research on PV systems and they have been connected to IIT Roorkee internal distribution-grid.

Thus the campus has more than 3 types of solar energy production. The institute is trying to put in more efforts in providing alternative energy.




About 2,205 kWh/person annually (total 18,065 institute population) electricity is used in the campus. Due to more alternative energy sources in the campus, the ratio of renewable energy used with respect to total energy consumed is about 7% including solar electricity and solar water heating.

2.3 Elements of Green Building

IITR implemented the elements of 'green building' such as natural ventilation and daylighting, introduction of courtyards in different areas, louvers and small widows on south façade, large glazed widows on north façade, solar panels installed on rooftops, use of energy and water efficient appliances and use of green materials for construction; to name a few "Mehta Family- School of Data Science and Artificial Intelligence". IIT Roorkee is practising incorporating Smart Building concepts across almost all of its campus infrastructure. In alignment with the principles of Green Building, one of the buildings currently under construction is in the process of securing a **Platinum rating** under the **IGBC Green Building Certification**. Additionally, two other buildings—the **Chemistry Building** and the **572-Seater Student Hostel**—are under review for the **'GHAR' rating** as part of the **CPWD Green Certification**. Notably, all newly constructed buildings on campus are being followed the concept of both **Smart Building** and **Green Building** principles.

2.4 Implemented Programs to Reduce GHG Emissions

IITR has implemented programs which aims to reduce all three scopes emissions:

Scope 1:

Process emissions: Direct greenhouse gas (GHG) emissions from physical or chemical processes rather than from fuel combustion.

Scope 2:

Purchased electricity: Indirect GHG emissions resulting from the generation of the electricity purchased and used by the institution.

Scope 3:

Waste: Indirect GHG emissions resulting from the incineration or landfill of institution's solid waste.

Commuting: Indirect GHG emissions resulting from regular commuting from and to institutions by students and employees. The total carbon footprint (Scope 1 and 2) of the institute is about 29591 metric tons (about 1.63 metric ton per person).

* https://cea.nic.in/wp-content/uploads/2021/03/User_Guide_Version_20.0.pdf

Scope	Description	GHG Emissions (tonnes CO_2-e/yr)
Scope 1	Direct GHG Emissions	
	- ACs - Refrigerant Leakage	704.94
	- Refrigerators Leakage	184.88
	- Institute-owned Cars	49.05
	- Total LPG Usage	1612.24
	Total Scope 1 Emissions	**2551.10**
Scope 2	Indirect GHG Emissions from Electricity	
	- Electricity Consumption (Grid)	26927.93
	- Solar Energy Consumption	111.84
	Total Scope 2 Emissions	**27039.77**
Scope 3	Other Indirect GHG Emissions	
	- Waste Management	2208.25
	- Wastewater Treatment	1339.23
	- Cars Entering Campus	314.81
	- Motorcycles Entering Campus	734.56
	- Food Consumed by Students	2892.64
	- Food Consumed by Families	1414.62
	- Engineering Workshop	123.83
	- Business Travel	1547.62
	Construction material	79226.13
	- T & D Losses	5924.15
	purchased goods & services	1628.77
	Total Scope 3 Emissions	**97354.60**

3

Waste:

Solid Waste Management:

The facility for management of solid waste of IIT Roorkee is developed by Fabetto Ecotech Pvt Ltd. at the site provided by Cantonment Board Roorkee. The solid waste (including horticultural waste, departmental waste, mess waste etc.) produced from IIT Roorkee campus is processed at the facility.

The Solid Waste Management work aims to effectively manage and process both wet waste (organic waste) and dry waste (inorganic waste) generated from campus. The waste management system is focused on reducing landfill waste, promoting recycling, and contributing to a more sustainable and eco-friendly campus.

Dry/Non-biodegradable waste management: All the dry waste is processed is MRF (material recovery facility) and it is sorted into many components. Firstly, primary segregation is done and that is followed by secondary segregation. Dry waste is separated into many components during primary segregation, such as plastic, metal, and glass. During secondary segregation, they further divide plastics into several categories and metals into various categories, such as aluminum tins and wrappers, utensils, iron pieces, etc. Similar categories exist for plastic: single-use, multiple-layered, food boxes, Gunny bags, Leno bags, Rubber shoes, HDPE, PP, LDPE, etc. Different recyclable materials are stored separately.

Wet/organic waste management: Processing of Wet/organic waste is done with composting. Horticulture waste is shredded and converted into compost using aerobic composting technique. Food and vegetable waste is mixed with horticulture waste for composting. Some cow dung and culture are being used for better composting process.

Sanitary waste management: Sanitary waste is collected from the IIT hostel naming Sarojini Bhawan, Vigyan Kunj, Kastoorba and Himalaya. Yellow sanitary bins are installed at appropriate places in and out of the girl's hostel buildings for the proper separate collection of sanitary waste. The collected sanitary waste is disposed properly through a Biomedical Waste Management firm.

Solid waste management of IIT Roorkee

3.1 Treatment and recycling activities

Waste treatment and recycling activities are major factors in creating a sustainable environment. The activities of Institute staff and students on campus produce a lot of waste; therefore, some recycling and waste treatments programs have been implemented in IITR.

Indian Institute of technology has implemented a Door-to-Door garbage collection program in the campus. Separate dustbins for wet/ organic and dry waste have been installed at various locations in the campus. The residents have been provided separate dustbins for wet and dry waste. A solid waste treatment plan is being developed in the campus for treatment and recycling of institute solid waste.

The Institute has established a formal policy to reduce the use of paper and plastic. To reduce the use of papers, emphasis is given on using digital technologies, reducing paperwork by using electronic communications for administrative and project works. Online submission of project proposals and online database management.

Creation of web repository of documents to avoid using papers. All the academic processes (eg: procedure for transcripts or mark sheets; notifications regarding courses; important notices, etc.) are uploaded online to reduce the use of paper.

3.2 Organic Waste Treatment

The organic waste is treated at the source itself.

Figure 3. Composting of solid waste of IITR campus

3.3 Sewage treatment plant

Sewage treatment plant of capacity 3 MLD has been constructed at Roorkee campus and 0.5 MLD capacities STP at Saharanpur campus of IIT Roorkee. At present treating STP running its full capacity. The STPs are based on the Sequencing Batch Reactor (SBR) process. It uses a fill and draw cyclical protocol inclusive of aeration and non-aeration sequencing to obtain biological treatment and sedimentation/clarification in the same basin. The system provides high-quality effluent for safe discharge or non-potable reuse with minimum space and power requirement.

Treated waste water are being used for watering the plants.

Thus the sewage has been treated for down cycling.

3.4 Initiative by NSS:

Tree Plantation Drive On September 24, 2024, NSS IIT Roorkee organized a tree plantation drive on campus to celebrate NSS Day. This initiative aimed to enhance green cover, promote environmental sustainability, and encourage students to actively participate in community service. In collaboration with Arsh Yog Jankalyan Trust, a local NGO dedicated to environmental conservation, a total of 100 saplings were planted. Of these, 86 were placed near Himalaya Bhawan, while 14 were planted in Rajiv Bhawan. The saplings were carefully chosen native species, ensuring they would thrive in the local climate and ecosystem.

During Zero Waste Week (September 25 – October 1, 2024), a series of impactful activities were organized to promote sustainability and responsible waste management. A Case Study Competition encouraged participants to analyse real-world sustainability challenges and propose innovative solutions. The Medicine Collection Drive gathered 10 kg of unused medicines, helping approximately 100 individuals in need. In the E-Waste Collection Drive, 5 kg of electronic waste was collected for proper recycling. Additionally, the Best out of Waste Competition inspired creativity by motivating participants to repurpose waste materials into useful or decorative items. These initiatives collectively fostered environmental awareness and community engagement toward a zero-waste future.

The Campus Cleanliness Drive at IIT Roorkee was organized on September 29, 2024, under the Swachhta Hi Seva campaign. The event saw active participation from 150-200 students, NSS volunteers, IITR staff, and faculty members. This initiative aimed to promote community service and environmental responsibility while emphasizing the importance of maintaining a clean and healthy campus environment. On September 29, 2024, under the Swachhta Hi Seva campaign, a Human Chain Formation was organized at IIT Roorkee to symbolize the collective effort required to uphold cleanliness and environmental responsibility.

Vehicle Check-Up Camp (in collaboration with Maruti Suzuki) To emphasize the importance of regular vehicle maintenance, NSS IIT Roorkee collaborated with Maruti Suzuki to organize a free vehicle inspection and safety assessment camp. The camp offered:

- Brake and tire checks to ensure optimal performance.
- Engine and oil inspections for smoother vehicle operation.
- Headlight and indicator assessments to promote night-time driving safety. The initiative reinforced the idea that a well-maintained vehicle is not just efficient but also significantly reduces accident risks.

3.5 Initiative by Eco-Group

A total of 20 e-waste collection bins were installed across the institute, with 13 bins placed in hostel areas and the remaining 7 bins positioned at key locations including the Main Building, Library Area, Student Activity Centre, and Multi-Activity Centre. This initiative aims to foster active student participation by diversifying the locations and making e-waste disposal more accessible. A focused effort was made to enhance inorganic waste disposal infrastructure in the campus:

100 mild steel dustbins (30 litres each) were installed around Rajendra Bhawan and the 1st-year hostel.

6 large PVC moveable bins (1100 litres each) were deployed near Sarojini Bhawan and the 1st-year hostel.

These new inorganic waste bins have been strategically placed adjacent to existing organic waste bins, creating dedicated paired waste collection points to promote proper waste segregation. The bins are colour-coded (Organic-Green; Inorganic-Blue) to avoid confusion.

Use of bio degradable cutlery: ADoSW (Bhawan and Mess) issued a notification banning use of non-biodegradable cutlery from the canteens in the campus. Most of the canteens have started the use of either biodegradable or steel-cutlery however several instances of defiance are seen and are being taken care.

All hazardous waste generated at IIT Roorkee is now being safely and responsibly disposed of by sending it to the Treatment, Storage and Disposal Facility (TSDF) located in Laksar. This practice ensures compliance with environmental regulations and promotes sustainable waste management within the campus.

4 Water:

4.1 Rain Water Recharge

The aim of the IITR is to decrease ground water usage, increase conservation programs, and protect the habitats.

Since Roorkee has a higher water table, the rain water is preferred to be recharged directly to the ground through open unpaved areas. IITR has 3,37,696 m^2 of open area which is used to recharge rain water to the ground.

The work for Rain Water Harvesting on pilot basis needs has been taken up at Roorkee campus for which two sites have been identified. The rainwater is collected from the roof of the Kasturba Bhawan. Thus the program has been implemented.

4.2 Efficient appliance usages

In IITR, the water efficient appliance usages are replacing conventional appliances. The water consumption using energy-efficient appliances are follows:

Appliance	Total Number	Total number water Efficient appliances	Percentage
WCs	2940	1385	47.10%
Wash Basins	3060	540	17.6%
Urinals	1090	320	29.35%
		Average Percentage	**31.66%**

Thus IITR houses about 31.66% water-efficient appliances.

4.3 Water Consumption

Sl. No	Title	IITR(lakh litre / year)	IITR-SRE (lakh litre / year)	IITR-GNEC(lakh litre / year)	Total (lakh litre / year)
1	Water consumption	27993	525	120	**28,638**

A water meter is installed to measure the amount of rainwater that has been used. The recycled water is also used for the garden sprinkler system, toilet flush and cooling system.

Current Water Consumption: 1MLD

5 Transportation:

5.1 Transportation Policies

Transportation policies - to limit the number of motor vehicles on campus uses of campus buses and bicycles have been implemented to encourage a healthier environment. The pedestrian policy has encouraged students and staff to walk around campus and avoid using private vehicles. Uses of bicycles on campus since students are not allowed to use motorized vehicles.

The use of environmentally friendly public transportation has decreased the carbon footprint around campus.

Total Number of Vehicles actively used and managed by the Institute - 14

- Electric Cars -02
- Diesel Cars - 04
- Electric Buggies - 02
- Traveller (Diesel) - 03
- Buses (Diesel) - 03

Number of Four Wheelers entering the Institute daily - 1790

Number of Two-Wheelers entering the Institute daily - 9350

5.2 Shuttle Service

Shuttle service is provided (by institute or other parties) and regular but not free. The future goal is to minimize on campus transportation which would help to reduce carbon footprint through better planning. Solar charged battery operated rickshaws are used as shuttle service in IITR.

Apart from this, Zero Emission Vehicles are available, and provided by the Institute at a subsidized charge.

The Indian Institute of Technology Roorkee campus sites are cyclist and pedestrian friendly. Many have vehicle-free paths for these users. The Institute has Zero Emission Vehicles such as E-Rickshaws for the users.

Better walkability on roads reduces the use of motorized vehicles.

These programs are resulting in more than 30% decrease in parking area or parking area reduction reaching its limit.

The total number of Zero Emission Vehicles (ZEV) divided by total campus population is about 0.71.

About 1.4 % of the total campus area is reserved for parking.

A Number of Transportation Initiatives is designed to decrease Private Vehicles on Campus:

E-Rickshaws inside campus.

The planning in the campus is done in such a way that the faculty houses and student residences are within 1 mile from the educational departments and offices. Hence no car-sharing is required due to the close proximity between different areas. Also, the pedestrian friendly paths help to decrease the use of private vehicles on the campus.

Pedestrian paths are available, designed for safety, convenience, and in some parts provided with disabled-friendly features.

Separator between road for vehicle and pedestrian path.

Ramps and guiding blocks which have suitable design for pedestrian having physical disabilities.

Street lamp for pedestrians at night.

5.3 Zero emission vehicle

Institute has adopted a policy of observing 1st day of each month during 8 am to 6 pm as No Carbon Emitting Vehicle Day in all campuses of IIT Roorkee with exemptions made to Government (GA numbered), milk, food, grocery, postal material delivery vehicles ↑ (Army), campus security, fire services, ambulance, and local administration vehicles, Vehicles carrying differently-abled persons/people with health concerns, Institute and Department guests from outside Roorkee and Taxis.

E-vehicle charging point intallations:

Charging points for e-scooters have been installed at Canal View Apartments, Shivalik Apartments, Hill View Apartments and River View Apartments. More are being installed.

In the institute garage there are two cars and two buggy carts and for them the charging station is installed in the institute vehicle section.

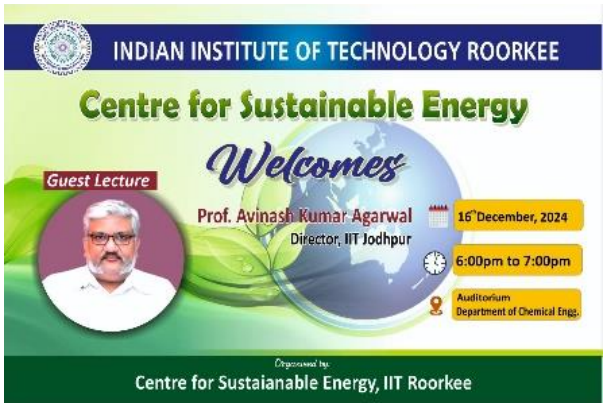
6 Education and Research:

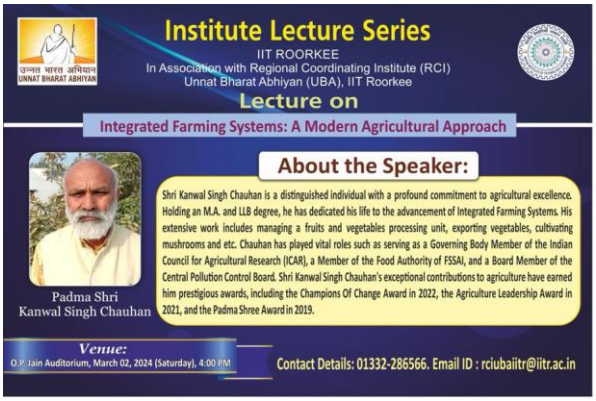
About 4.8% courses in IITR are related to sustainability; so much so that the Institute uses 2.5 % of the total research funds for sustainability related research projects.

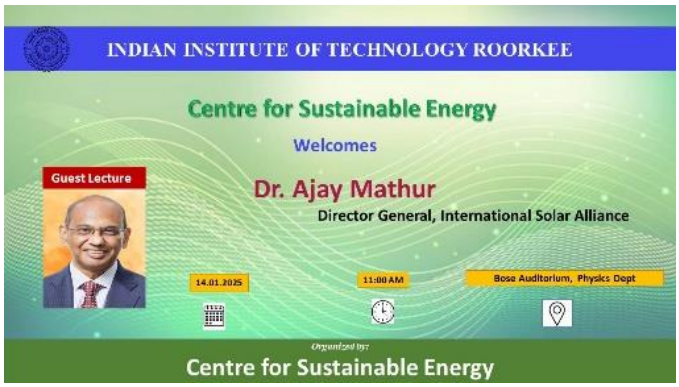
Apart from that, the Institute hosts a number of events (e.g. conferences, workshops, awareness raising, practical training, etc.) related to the issues of environment and sustainability.

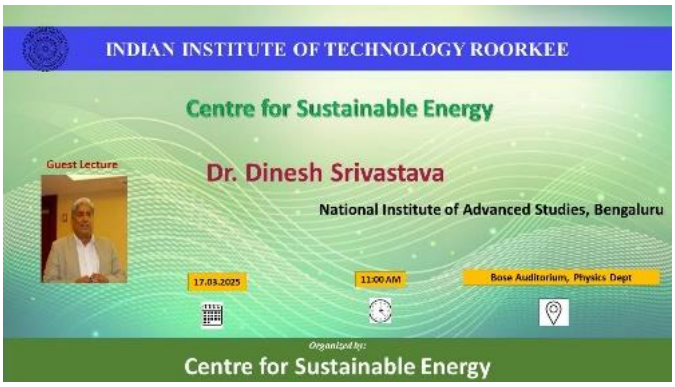
The details of initiatives/ events on sustainability are as follows:

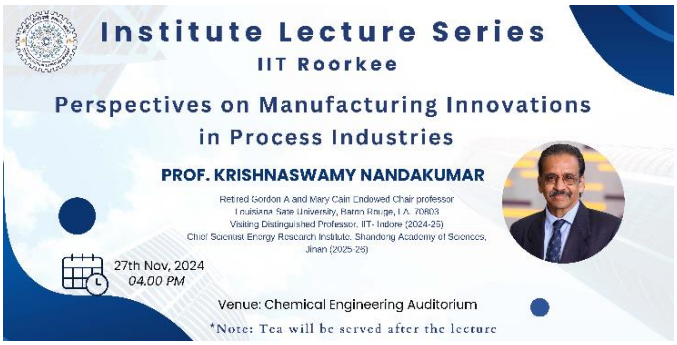
1. Institute Lecture on Sustainable Rural Development
2. The International Chemical Engineering Conference on Energy, Environment, and Sustainability (ICECEES-2024), the IDEAS-2024 international symposium.
3. Promoting Chemical free Holi Colours made by SHG women, Initiative under Unnat Bharat Abhiyan
4. Garbage segregation at campus
5. Digitization of Academic Administrative processes
6. Smart Toilets and smart corridors

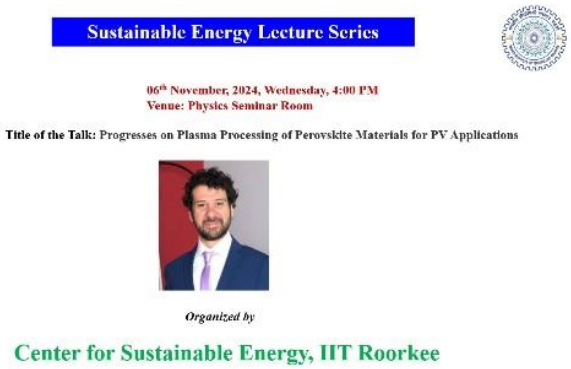












There are about 6 student organisations related to sustainability.

National Service Scheme (NSS): NSS IIT Roorkee is the largest student-body group of IIT Roorkee that brings an entirely new dimension to this prestigious institute. NSS is an organization consisting of 10 well-coordinated cells through which we keep on contributing to several domains of social service.

ECO Group: To make IITR campus sustainable & inculcate sustainability and the importance of the environment in the campus community.

Unnat Bharat Abhiyan (UBA): Unnat Bharat Abhiyan is inspired by the vision of transformational change in rural development processes by leveraging knowledge institutions to help build the architecture of an Inclusive India. The student team identifies problems persisting in the villages and proposes solutions pertaining to the

fields including but not limited to sanitation & cleanliness, education, skill development, agriculture, physical infrastructure, social and institutional infrastructure. The team promotes alternative and eco-friendly methods of farming like organic farming, alternative energy sources like biogas in the villages.

IGBC Student Chapter : Indian Green Building Council (IGBC), part of Confederation of Indian Industry (CII), in its efforts to inspire young minds as green as a way of life has launched IGBC students' chapter in the Indian Institute of Technology (IIT), Roorkee.

Enactus IITR: Enactus, IIT Roorkee focuses upon making efforts to create social entrepreneurs while promoting social innovation, community Building and employment generation. They as a group, endeavour for an 'entrepreneurial action for us'. They work upon challenging various socio-economic problems and proposing sustainable solutions by employing entrepreneurial skills.

Children Rights and You (CRY IITR): CRY IIT Roorkee was rooted in April 2012 and since then it has been one of the most active sites of its work. This group volunteers for development of neighbouring areas and participates actively in both in and off campus projects. Working in parallel with NSS at IIT-R, CRY is also involved in various clothes collection drives and routinely arranges various competitions to encourage their cultural creativity.

Cultural Council: it is a student body which is responsible for all the cultural events in the Institute round the year. It comprises of seven sections which take care of the varied fields of cultural events.

Spic Macay: SPIC MACAY seeks to conserve and promote an awareness of the rich and heterogeneous cultural tapestry amongst the youth and the general public.

Conclusion:

Thus enabling a culture of Sustainable development across the Indian Institute of Technology, Roorkee has enhanced the student and staff experience thus creating a global legacy. The Green-Campus Initiatives in IITR is creating a holistic aim to make environmental awareness and action an intrinsic part of the life and ethos of educational facilities. IITR aims at doing important work not only on environmental issues but also on social and economic matters, thereby covering the three dimensions of sustainability.