



DUTIKA SAHU COLLEGE LAIDA - SAMBALPUR

ENVIRONMENT AUDIT REPORT 2022-2023

PREPARED BY EHS ALLIANCE SERVICES





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AUDIT CERTIFICATE







ACKNOWLEDGEMENT

EHS Alliance Services would like to thank the management of Dutika Sahu College for assigning this important work of Environment Audit. We appreciate the co-operation to the teams for completion of assessment.

First of all, we would like to thank *Dr. Basanta Kumar Naik - Principal* for giving us an opportunity to evaluate the environmental performance of the campus.

We would also like to thank *Ms. Gayatri Patel – Audit Coordinator and Member, Green campus monitoring committee (GCMC)*, for her continuous support and guidance, without which the completion of the project would not have been possible. We are also thankful to other staff members who were actively involved while collecting the data and conducting field measurements.

We are also thankful to

Dr. Nibedita Nath	Member, Green campus monitoring committee (GCMC)
Mr. S.K. Sirajul Haque	Member, Green campus monitoring committee (GCMC)
Ms. Namrata Pradhan	Member, Green campus monitoring committee (GCMC)
Ms. Chandini Pujari	Member, Green campus monitoring committee (GCMC)





DISCLAIMER

EHS Alliance Services Audit Team has prepared this report for Dutika Sahu College based on input data submitted by the representatives of College complemented with the best judgment capacity of the expert team.

While all sensible care has been taken in its preparation, details contained in this report have been compiled in good faith based on information gathered.

It is further informed that the conclusions are arrived following best estimates and no representation, warranty or undertaking, express or implied is made and no responsibility is accepted by Audit Team in this report or for any direct or consequential loss arising from any use of the information, statements or forecasts in the report.

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Signatu

LEAD AUDITOR





CONCEPT AND CONTEXT

In India, the process for environmental audit was first mentioned under the Environment Protection Act, 1986 by the Ministry of Environment of forests on 13th march, 1992. As per this act, every person owning an industry or performing an operation or process needs a legal consent and must submit an environmental report or statement.

The National Assessment and Accreditation Council, New Delhi (NAAC) has made it mandatory from the academic year 2019–20 onwards that all Higher Educational Institutions should submit an annual Green, Environment and Energy Audit Report. Moreover, it is part of Corporate Social Responsibility of the Higher Educational Institutions to ensure that they contribute towards the sustainable environment.

In view of the NAAC circular regarding environment auditing, the College management decided to conduct an external environment assessment study by a competent external professional auditor.

The term 'Environmental audit' means differently to different people. Terms like 'assessment', 'survey' and 'review' are also used to describe similar activities. Furthermore, some organizations believe that an 'environmental audit' addresses only environmental matters, whereas others use the term to mean an audit of health, safety and environment-related matters. Although there is no universal definition of Environment Audit, many leading companies/institutions follow the basic philosophy and approach summarized by the broad definition adopted by the International Chambers of Commerce (ICC) in its publication of Environmental Auditing (1989).

The ICC defines Environmental Auditing as:

"A management tool comprising a systematic, documented, periodic and objective evaluation of how well environmental organization, management and equipment are performing with the aim of safeguarding the environment and natural resources in its operations/projects."

This audit focuses on the environment legal compliances and implementation of rules defined by MoEFCC or state pollution control board. The concepts, structure, objectives, methodology, tools of analysis, and objectives of the audit are discussed below.





INTRODUCTION

Nature is very precious gift for all life forms. Disturbance in the nature causes environmental Problems. These are increasing day by day as a result of development of urbanization and industrialization on earth. Because of unplanned utilization of resources, our planet is facing tremendous pressure results a sharp rise in temperature. Therefore, there is an urgent need to plan the consumption of the resources in sustainable manner in order to conserve natural resources for future generation.

Sustainable development is becoming popular in the world for saving the earth. Utilizing resources in judicially can save the earth's precious resources. Measurement of environmental components is the most effective step to conserve and protect natural resources.

Environmental auditing had begun in the early 1970s with provision of civil lawsuits for noncompliance with environmental regulations. Environment auditing involves on site visit, collection of samples, performing analyses, and report results to competent authorities.

Industry, the corporate world is initiating auditing for saving natural resources. Academic institutions also can contribute to the preservation and conservation of resources within their premises.

In thin "Environment Audit" report would help everyone to think about preserving resources, show willingness to learn their importance, adopt steps to minimize resource use and set an example for others to follow the path of eco-friendly practices to achieve the goal of sustainable development. Effective implementation of environmental auditing helps in minimization of environmental risks at low cost.





OVERVIEW OF THE COLLEGE

D.S College, Laida is situated in the District of Sambalpur, Odisha which has been registered under Govt of Odisha Education and youth Services Department, Oder No. IVE/C.226/90. 45466/EYS.Dt. 16/10/1990 for three year Degree Courses in Arts in Dutika Sahu College, Laida in the Dist. of Sambalpur and permanent affiliated with Sambalpur University, Order No. 9563/ASW, Dt-04/06/1992 and registered under the Societies Act XXI OF 1860, Regd No- 16907/1741 of 1979-1980.



Due to poverty and lack of guidance many pass outs from matriculation had no access to be admitted in G.M College, Sambalpur. With the Leadership of Combrade, Iswar Chandra Naik and financial help from Smt. Dutika Sahu, the child of the Soil, and with the co-operation of villagers this college has been established in 1979 and named as Dutika Sahu College, Laida.

The college Started with Arts wings. In the year 1979 and +3 Arts +3 Science (started in 2019-20 session with all Honours program in Botany, Chemistry, Mathematica, Physics, and Zoology) in the year 1981 with Political Science, History, Odia, Education and Economics. +2 Science was added as an extremism using from the year 1993. Now the College has a student strength of 968. The College is running properly with the said subjects.





MISSION

The Mission of Dutika Sahu College, Laida, a rural based college is to enhance inventive educational atmosphere and facilitate to enable students to develop personality and acquiring jobs and to become a good citizen of the nation.

VISION

The culture of Excellence The Culture of Innovation The Culture of Quality The Culture of Flexibility and Dynamism The Culture of Sustainability Vision We envision a College that leads the campus and the capital region as the centre for cross-disciplinary exchange and programming, and ranks as an acknowledged innovator in research and teaching in the Arts and Humanities

VALUES

Dutika Sahu College, Laida will facilitate best education that would be responsible for the necessity of the society and enable them to face with their social, economic and national problems. The college would draw out the best of the students' body, mind and soul.

MISSION, VISION & VALUES









AUDIT PARTICIPANTS

On behalf of the college

Name	Designation
Dr. Basanta Kumar Naik	Principal
Ms. Gayatri Patel	Audit Coordinator and Member, Member, Green
	campus monitoring committee (GCMC)
Mr. S.K. Sirajul Haque	Member, Green campus monitoring committee (GCMC)
Mr. Kailash Behera	Member, Green campus monitoring committee (GCMC)
Ms. Namrata Pradhan	Member, Green campus monitoring committee (GCMC)
Dr. Nibedita Nath	Member, Green campus monitoring committee (GCMC)

On behalf of EHS Alliance Services

Name	Position	Qualifications
Dr. Uday Pratap	Lead-Auditor	Ph.D., PDIS, QCI – WASH, Lead Auditor ISO 14001:2015
Ms. Pooja Kaushik	Co-Auditor	M.Sc., Field Expert

EXECUTIVE SUMMARY

The environment audit is a snapshot in time, in which one assesses campus performance in complying with applicable environmental laws and regulations. Though a helpful benchmark, the audit almost immediately becomes out-dated unless there is some mechanism in place to continue the effort of monitoring environmental compliance. Our approach to promote a Green Campus to inculcate sustainable value systems among the students, so that they carry the learning and practice

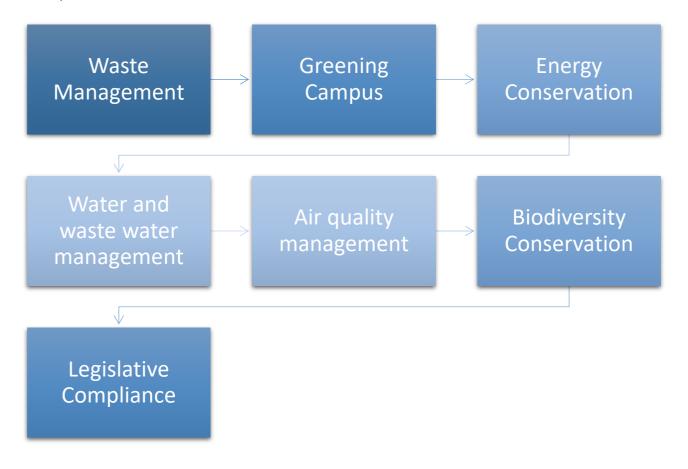




them in their future endeavors. This will ensure that Sustainability and Environmental practices get embedded in all the institutions and organizations in the country.

A Green Campus is a place where environmentally friendly practices and education combine to promote sustainability in the campus which ultimately offers an institution the opportunity to take the lead in redefining its environmental culture and developing new paradigms by creating sustainable solutions to the environmental, social, and economic needs of mankind.

This is the very first environmental audit of the College for doing their bit towards environmental protection and environmental awareness at local and global fronts. The audit criterion is environmental cognizance, waste minimization and management, biodiversity conservation, water conservation, energy conservation, and environmental legislative compliance by the campus. A questionnaire is used during audit. This audit report contains observations and recommendations for improvement of environmental consciousness.















WASTE MANAGEMENT

TYPES OF WASTE ON COLLEGE CAMPUS

To create effective waste management plans, College first needs to know the types of waste they produce. Below, we have compiled a list of various kinds of waste commonly generated on institutional campus:

- 1. **Food Waste** College campus generates food waste. The average mess and canteen generate approximately 20 kg of food waste a day. The reasons for food waste on an educational campus may be over purchasing food to ensure a sufficient supply and then throwing it away, especially in canteen/cafeteria where plentiful stores are essential. And in the cafeteria, students may pile food onto their ample trays, find it unappealing once they sit down and dutifully scrape it into the garbage. Immediate attention is given to the food waste minimization techniques.
- 2. **Recyclable Paper, Cardboard, Plastic, Glass and Cans** -Campus tends to produce vast quantities of these recyclables. Even in the digital age, many students, professors and staff members still prefer handwritten notes and end up with piles of unwanted paper once their courses and projects are complete. The snacks so essential for socializing tend to come in recyclable plastic, glass or aluminum containers. And shipments of necessary items throughout the year are likely to arrive in recyclable plastic and cardboard packaging. The same is sold/auctioned to the scrap vendors time to time.
- 3. **Student Clothes and Housewares** As we have mentioned above, many students find it more convenient to throw away their clothes and dorm furnishings at the end of the year than donate or recycle them.
- 4. **E** Waste Student and facility electronics often form a large portion of a campus's waste As campus continually upgrade their computing facilities and office computers to keep up with the latest technology, the old computers have to go somewhere. Same is the case with old printers, phones, copy machines and other electronics that receive upgrades over the years. Discarded student electronics often become part of a College's waste stream as well. Students may throw away old phones, TVs, tablets, laptops and printers, along with cords and other accessories. Recycling is a much more eco-friendly option the metals in old electronics often have a high reuse value. College has tie-up with external authorised agency details mentioned in legislation compliances.
- 5. **Maintenance Waste** In the maintenance department, spent paints, solvents, adhesives and lubricants all form potentially hazardous waste. Because they are difficult to recycle, spent incandescent light bulbs usually become landfill waste. Spent fluorescent light bulbs,





which contain small amounts of mercury, typically require special handling because of the environmental and health risks they pose.

- 6. **Furniture** Furniture waste on a college campus has a couple different sources. The campus itself may also get rid of old furniture as it modernizes its classrooms, cafeterias, computer labs and study spaces. Annually sold to junk dealer.
- 7. **Books/Magazines/Newspapers** Books accounted for solid waste generation and College often generate tons of textbook waste. As courses upgrade to new editions, they may end up throwing their newly obsolete textbooks into the garbage if donation programs cannot use them. Students of Dutika Sahu College donates their text books and notes to junior students, or else are auctioned to reseller.
- 8. **C & D Waste** Expansion of college campus building and renovation works result significant amount of construction and demolition waste that should be either used for back filling or disposed off through authorised dumping site by CPCB/SPCB.
- 9. **Solid Waste** The College is managing solid waste by providing it to the Municipal Corporation.

ENERGY CONSERVATION

- 1. List ten ways that you use energy in your institute. (Electricity, LPG, firewood, others). Using this list, try to think of ways that you could use less energy every day.
 - Using Energy efficient appliances
 - Switching off the electrical equipment when not in use
 - Use of Air conditioners at optimum temperatures as per the utilization schedule
 - LED lights

2. Are there any energy saving methods employed in your institute? If yes, please specify. If no, suggest some

Yes, Dutika Sahu College has adopted energy saving techniques

- LEDs installed
- Use of Air conditioners at optimum temperatures as per the class timetable
- Car pooling



Environment Audit Report



3. How many CFL/LED bulbs has your institute installed?

Dutika Sahu College has replaced almost 60% of the conventional bulbs and tube lights with LED Lights.

4. Do you run "switch off" drills at institute?

Yes

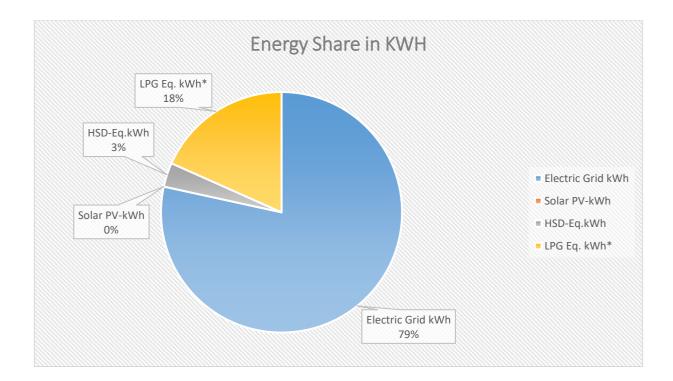
5. Are your computers and other equipment's put on power-saving mode?

Yes, Dutika Sahu College put the equipment on power saving mode

6. Does your machinery (TV, AC, Computer, weighing balance, printers, etc.) run on standby modes most of the time? If yes, how many hours?

Yes

Energy Share	kWh	Percentage (%)
Electric Grid kWh	4086	78.43%
Solar PV-kWh	0	0.00%
HSD-Eq.kWh	169	3.24%
LPG Eq. kWh	955	18.32%
Total -kWh	5210	100%







WATER AND WASTEWATER MANAGEMENT

1. List uses of water in your institute

Basic use of water in campus:

Drinking – 23.90 KL/month

Gardening – 382.43 Kl/month

Kitchen and Toilets – 187.62 KL/month

Others – 72.19 KL/month

Hostel – 0.00 KL/Month

Total = 666.14 KL/Month

2 How does your institute store water? Are there any water saving techniques followed in your institute?

College stores water in overhead tanks.

Saving Techniques Avoid overflow of water-controlled valves are provided in water supply system. Close supervision for water supply system.

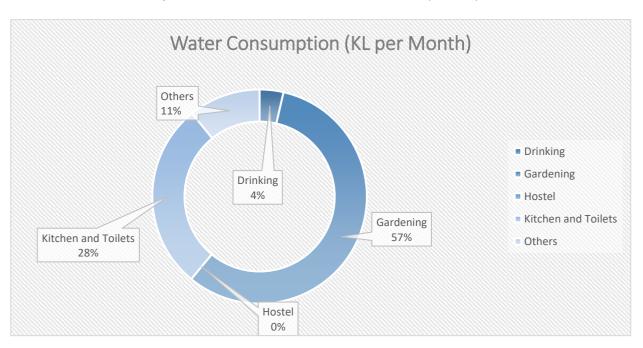
3. Locate the point of entry of water and point of exit of waste water in your institute. (Entry and Exit)

Entry - Water comes from Borewells.

Exit- From Canteen, Toilets, Hostel and bathrooms through covered drainage which is connected to soak pits.







4. Write down ways that could reduce the amount of water used in your institute

Basic ways:

- Close the taps after usage
- Water Conservation awareness for new students
- Maintenance and monitoring of valves in supply system to avoid overflow, leakage and spillage

5. Does your institute harvest rainwater?

No

6. Is there any water recycling System?

No





AIR QUALITY MANAGEMENT

1. Are the Rooms in Campus Well Ventilated?

Yes, as per National Building Code, guidelines

2. Window Floor ratio of the Rooms?

Very Good, ample daylight utilization because of big windows.

3. What is the ownership of the vehicles used by your campus?

Dutika Sahu College doesn't own any vehicle

4. Provide details of college-owned vehicles?

Details of college- owned vehicles	Buses	Cars	Vans	Other	Total
No. of vehicles	0	0	0	0	0

5. PUC done?

NA

6. Specify the type of fuel used by your campus's vehicles

NA

8. Air Quality Monitoring Program (If, Any)

No monitoring is being done





ENVIRONMENT LEGISLATIVE COMPLIANCE

1. Are you aware of any environmental Laws Pertaining to different aspects of environmental management?

Yes

2. Does your institute have any rules to protect the environment? List possible Rules you could include.

Yes, the eco club of Dutika Sahu College is conscious about the environment protection and takes proper measures in terms of awareness campaigns, activities, webinar, seminars, etc.

3. Does Environmental Ambient Air Quality Monitoring conducted by the Institute?

No

4. Does Environmental Water and Waste water Quality monitoring conducted by the Institute?

No

5. Does stack monitoring of DG sets conducted by the Institute?

No

6. Is any warning notice, letter issued by state government bodies?

No

7. Does any Hazardous waste generated by the Institute?

No



Environment Audit Report



GENERAL INFORMATION

1. Does your institute have any rules to protect the environment? List possible rules you could include.

Yes, Dutika Sahu College eco cub carries out various programs for environment protection periodically on the campus.

2. Are students and faculties aware of environmental cleanliness ways? If Yes Explain

Yes, college organizes various activities for environment cleanliness

- Reduce carbon footprints by opting energy saving methods and using public commutes.
- Recycling of waste products
- > Avoid single use plastic
- Less use of paper

3. Does Important Days Like World Environment Day, Earth Day, and Ozone Day etc. eminent in Campus?

Yes, World Environment Day, Ozone Day, Earth Day, and more are celebrated by campus. Furthermore, Dutika Sahu College organizes different activities like a Donation drive, 3 day training session on "Resilience to Disaster: Technological, Financial, & Capacity Building", a plantation drive and many more.

4. Does the Institute participate in the National and Local Environmental Protection Movement?

Yes

5. Does Institute have any Recognition or certification for environment friendliness?

Yes

7. Does Institution conduct a green or environmental audit of its campus?

This is the first external audit carried out by the College.

8. Has the institution been audited /accredited by any other agency such as NABL, NABET, TQPM, NAAC etc.?

N/A





BEST PRACTICES

- The institution has functional compost pits for organic solid waste management.
- There is ban on single use plastic and plastic crockery in the campus.
- College has a separate storeroom for the safe storage of electronic waste. After a certain interval of time college disposes of the E-waste to concerned agencies through the auction process.
- Personal Vehicles (Students) are not allowed in the campus

RECOMMENDATIONS

- Provide sanitary waste disposal facility as per the CPCB guidelines for management of sanitary waste (as per Solid Waste Management Rules, 2016). Installation of Incinerator is recommended in campus
- Agreement with third party authorised vendors should be done for different types of waste management, such as paper recycling, e-waste, BMW, Plastic waste, etc.
- Eco-friendly parameters should be included in the purchase of articles and goods for the campus.
- College should run Conservation awareness campaigns like online sessions and webinars for students and staff.





CONCLUSION

This audit involved extensive consultation with all the campus team, interactions with key personnel on a wide range of issues related to Environmental aspects. Dutika Sahu College has an eco-club for sustainable use of resources.

The audit has identified some observations for making the campus premise more environmental friendly. The recommendations are also mentioned with observations for the college campus team to initiate actions. The audit team opines that the overall site is well maintained from an environmental perspective. Few things that are important to initiate urgently are waste management plan and agreement with third party authorised vendors for waste management.

REFERENCES

- The Environment [Protection] Act 1986 (Amended 1991) & Rules-1986 (Amended 2010)
- The Petroleum Act: 1934 The Petroleum Rules: 2002
- The Central Motor Vehicle Act: 1988 (Amended 2011) and The Central Motor Vehicle Rules:1989 (Amended in 2005)
- Energy Conservation Act 2010.
- The Water [Prevention & Control Of Pollution] Act 1974 (Amended 1988) & the Water (Prevention & Control of Pollution) Rules 1975
- The Air [Prevention & Control Of Pollution] Act 1981 (Amended 1987) The Air (Prevention & Control of Pollution) Rules 1982
- The Gas Cylinders Rules 2016 (Replaces the Gas Cylinder Rules 1981
- E-waste management rules 2016
- Electrical Act 2003 (Amended 2001) / Rules 1956 (Amended 2006)
- The Hazardous Waste (Management and Handling and Trans-boundary Movement) Rules, 2008 (Amended 2016)
- The Noise Pollution Regulation & Control rules, 2000 (Amended 2010)
- The Batteries (Management and Handling) rules, 2001 (Amended 2010)
- Relevant Indian Standard Code practices





APPENDIX I



Standard Operating Procedures for Zoology Laboratory, Dutika Sahu Degree College Laida Sambalpur

SOP for the Laboratory :

- Laboratory includes the space where experiments are done and includes equipment, consumables, components, electrical appliances, chemicals, glassware along with safety equipment required for the conduct of experiments in the laboratory.
- Store is the location where newly purchased equipment / consumables are stored till there is a requirement for the same.

Safety:

Equipment / Chemicals in a laboratory may pose risk of damage to life and property. Hence all safety protocols needed for safe operation / safe handling of equipment / chemicals must be followed and may include-

- a. Ensuring adequate insulation from earth when handling electrical equipment and wiring.
- b. Ensuring that anyone entering the laboratory wears a foot wear at all times when inside the laboratory

c. Complying with all the safety instructions given by the instruction manual of the equipment or instructed by the course teacher

- d. Ensuring the presence of proper exhaust mechanism when dealing with toxic chemical fumes.
- e. Wearing gloves and other protective equipment wherever and whenever required.

f. Availability of First Aid box in the laboratory must be ensured. In case of any accident, seek urgent medical attention after administration of first aid in the premises.

Procurement of Equipment/ Chemicals / Glassware:

g. The staff members of the department (the internal committee) takes the initiative to place the requirements before the HOD as and when required. The HOD thereafter places the requirements before the administration (principal).

h. Requisition from faculty for requirement of equipment/ Chemicals / Glassware in every academic year is taken.

i. The lab-in-charges inform the teacher- in-charge about the stock of chemicals.

j. Call for quotations is done by the principal and purchases too.

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SOP for Zoology Laboratory



Environment Audit Report



	Standard Operating Procedures for Chemistry Laboratory, Dutika Sahu Degree College Laida Sambalpur
The p chemi to the	or Chemistry Laboratories: urpose of this SOP is to provide standard operating procedures for handling of cals and apparatus in the Department of Chemistry laboratory. This is in addition routine precautions that are followed while WORKING in a chemistry lab. ONSIBILITIES FOR STUDENT:
a. b.	Follow the instructions of the teachers during the class. Always wash up after using chemicals.
с.	Always read the MSDS (Material Safety Data Sheet) about the chemicals prior to
d	use. Use safety goggles, lab coat while performing any experiment.
e.	Do not perform any experiment/reaction without the permission of the teacher.
f.	Do not taste any chemical from the laboratory bottles even though they may
	seem tobe common/harmless i.e salt/glucose etc.
RESP	ONSIBILITIES FOR TEACHERS:
g.	The students have read the SOP and understood them. The students are aware of the characteristics of the chemical through MSDS
n.	andknow its safe handling.
i.	The teachers themselves are aware of thesafe handling of each chemical being
	used in the laboratory.
j.	The students do not violate the safety norms.
k.	Report any safety violation by the any staff/student to the HOD of the department.
1.	Report any major laboratory accident to the HOD immediately and provide medical aidto the injured as soon as possible.
	medical aldto the injured as soon as possible.
2. RE	SPONSIBILITIES OF LABORATORY STAFF
All m	embers of the laboratory staff are required to:
a.	Make sure that the work allotted to them is complete and the lab is in proper order.
b.	Be responsible for the general safety of the students and all your colleagues.
с.	Be alert while in the chemistry lab.
d.	Handle chemicals safely.
	(TAH) - 23

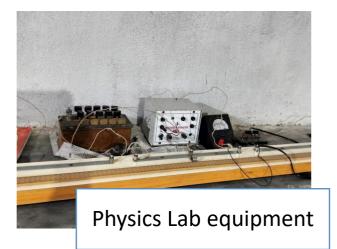




ANNEXURE PHOTOGRAPHS









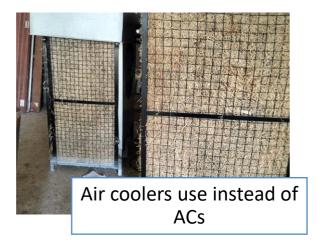
Well equiped labs











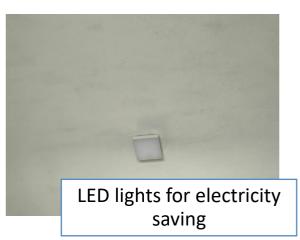






Cleanliness Drive















students







******** END OF THE REPORT ********