



GREEN AUDIT REPORT 2021-2022

Prepared By
Internal Quality Assurance Cell (IQAC),
&
Green Audit Committee

PATTAMUNDAI COLLEGE, PATTAMUNDAI
KENDRAPARA, ODISHA 754215

ACCREDITED BY NAAC GRADE "B" (SECOND CYCLE)



PREPARED BY ENVIRONMENT COMMITTEE IN ASSOCIATION WITH IQAC
PATTAMUNDAI COLLEGE, PATTAMUNDAI

Green Audit Assessment Team

- Mrs. Suchismita Biswal, Lecturer in Botany & Coordinator Green Audit Committee.
- Dr. Sunil Kumar Pradhan, Reader in Chemistry & IQAC-Coordinator.
- Dr. Fakir Chandra Pradhan, Reader in Chemistry, Green Audit Committee Member
- Dr. Manas Kumar Nayak, IQAC Member &, Green Audit Committee Member
- Sri Arabinda Pandab, HOD-Mathematics, Green Audit Committee Member
- Sri Subhasis Mishra, Lecturer in Economics, Green Audit Committee Member
- Sri Sarojakanta Nayak, Lecturer in English, Green Audit Committee Member
- Sri Jitendra Malik, Lecturer in Commerce, Green Audit Committee Member
- Sri Amit Kumar Sahoo, Lecturer in Physics, Green Audit Committee Member
- Sri Alok Kumar Sahu, Lecturer in Logic & Philosophy, Green Audit Committee Member
- Sri Bijaya Kumar Patra, Forester, Rajnagar, External Auditor
- Sri Bisworanjan Tarai, Forest Guard, Rajnagar, External Auditor

Environment Committee, Pattamundai College
Go green Think green

EXECUTIVE SUMMARY

Education plays a very important role in nation building because education transforms the human being into an intelligent honest citizen for its country. Environmental education refers to organized efforts to teach how natural environment functions. This education helps individuals in solving problems related to environment, takes action to improve environment and explores environmental issues. As a result, people develop a deeper understanding of environmental issues and become well informed to take responsible decisions. Environmental Audit or Green Audit is a process to assess the environmental performance of an organization against its environmental policies and objectives.

The Green Audit process of Pattamundai College includes reviewing mechanisms that helps systematic identification, quantification, analysis, and reporting of the critical aspects that matter in the environmental assessment of a site. It is conducted through initial interactions with the management to clarify policies, activities, records and cooperation of staff and students in the implementation of mitigation measures. This was followed by collection of data through questionnaire, review of records, observation of practices and observable outcomes. Water and soil samples are collected from different locations of the college, and it is tested in laboratories to assess its quality. This approach ensures that the management, staff and students are active participants in the green audit process of the college. The purpose of conducting green audit is to assess environmental condition of this institution through which corrective measure can be taken for its improvement.

CONTENT

Serial No.	Items	Page
1	Brief Background of the College	04
2	Vision of the College	05
3	Mission of the College	05
4	NAAC Accreditation	06
5	Courses offered	06
6	Faculty Position (Teaching/ Non-teaching)	07
7	Students' Strength	08
8	Physical Structure	10
9	Establishment of Environment Management System	11
10	Objectives of Green Audit	13
11	Target Areas of Green Auditing	14
12	Methodology Adopted	16
13	Audit Stage	17
14	Green Audit Report	17
15	Water Quality Assessment	18
16	Water Management	21
17	Soil Quality Assessment	23
18	Energy Audit	26
19	Waste Management	30
20	Green Campus	31
21	Carbon Footprint Analysis	39
22	Activities	40
23	Gallery	42
24	Major Observations	50
25	Suggestions and Recommendations	52

Brief Background of the College

Pattamundai is located at 20.57°N 86.57°E & 22 km from the Bay of Bengal in the coastal plains, at an elevation of 6 m from sea level. Pattamundai is a flat, low-lying delta region in the Lower Mahanadi River basin. The Brahmani River divides it from the Aul block. The Pattamundai Canal running from Cuttack to Alva Lock (80.5 km) constructed by the East India Company during the mid-19th century, is a major irrigation canal passing through the city. The Pattamundai College is situated on the bank of river Brahmani. The soil with high organic matter (5-15 %) formed in temperate and cool humid region, and low organic matter (1-3 %) in soil arid and semi-arid zones. The average rain-fall in the year 2021-22 is recorded 100-170 cm. while temperature between 20°C-38 °C. but during winter, temperature is 10°C-25°C

The college was established in the year 1970 through the collective efforts of the people of Pattamundai who wanted higher education at their door step.

This college is the 2nd largest college of the district and it upholds the purpose for which it was founded way back in the late sixties. This college is affiliated to Utkal University, the premier university of Odisha, provides ample scope to the students in fulfilling their dreams. This year National Assessment and Accreditation Council (NAAC) Council accredited this institution with 'B' grade.

This institution regularly improves its infrastructure by adding new buildings, hostels, renovating library, laboratories and playground, it also emphasizes to enhance its academic quality to take this institution to a new height academic excellence. It contributes toppers at University level in different years and also produces many more best students along with achievements in sports and other fields. The contribution of its NCC, NSS and YRC students has a remarkable effect in serving society by donating blood, planting trees, cleaning campus, observing national days, conducting seminar and webinars etc. Since 1990 this college has planted around 4000 trees both inside and outside the campus. The institution has an eco-friendly campus with a permanent waste management policy of its own.



Location of Pattamundai College

Vision of the College

- To make higher education qualitative and value based for the socio-economic transformation of the nation.
- To instil a sense of discipline and morality among the student's community for the making the students socially responsible citizens.

Mission of the College

- To grow into an institution of excellence and exemplary at the university level.
- To provide literary, scientific, professional and technical education to the aspiring rural youth at a minimum cost.
- To be recognized as an institution with proven capacity to provide quality education in Science, Commerce & Humanities.
- To create symbiotic relationship with the society to meet the changing needs.
- To introduce self-financing courses in multidisciplinary area.
- To adopt continues measures to improve the quality of the programme.
- To provide need-based career-oriented courses to cater the needs of the society

- To involve the Alumni for all round development of the college

NAAC Accreditation

Year: 2006 2021
Grade: B+ B

Courses offered:

The institution offers following programmes which include the different courses as given in the table below.

PROGRAMME OFFERED	COURSES OFFERED
Bachelor of Arts	Economics
	Education
	English
	History
	Odia
	Philosophy
	Political science
	Sociology
Bachelor of Science	Botany
	Chemistry
	Mathematics
	Physics
	Zoology
Bachelor of Commerce	Commerce

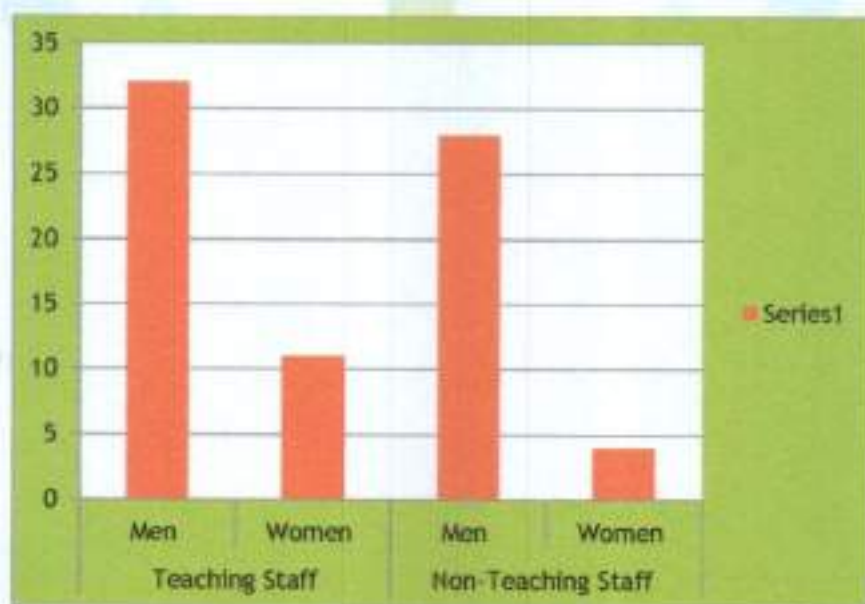
Environment Committee, Pattamundai College
Go green Think green

Faculty Position (Teaching/ Non-teaching):

Among the total staff, detailed analysis of men and women of both the categories are given.

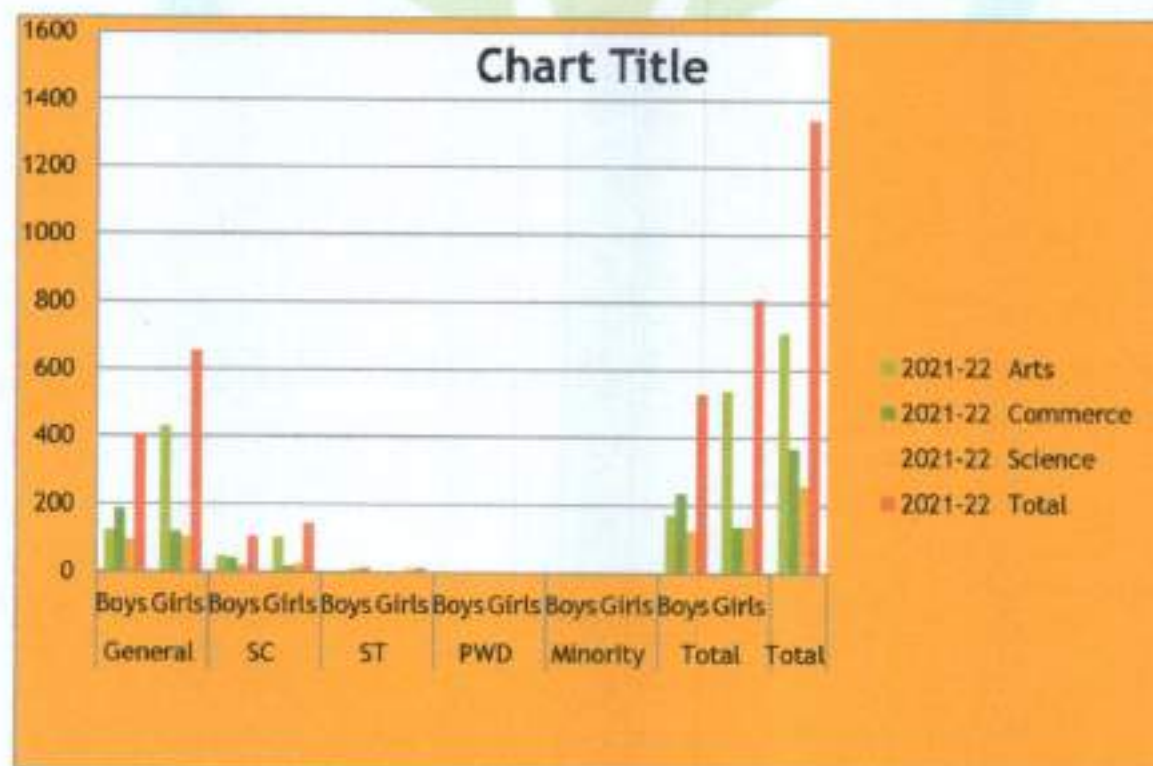
2021-22

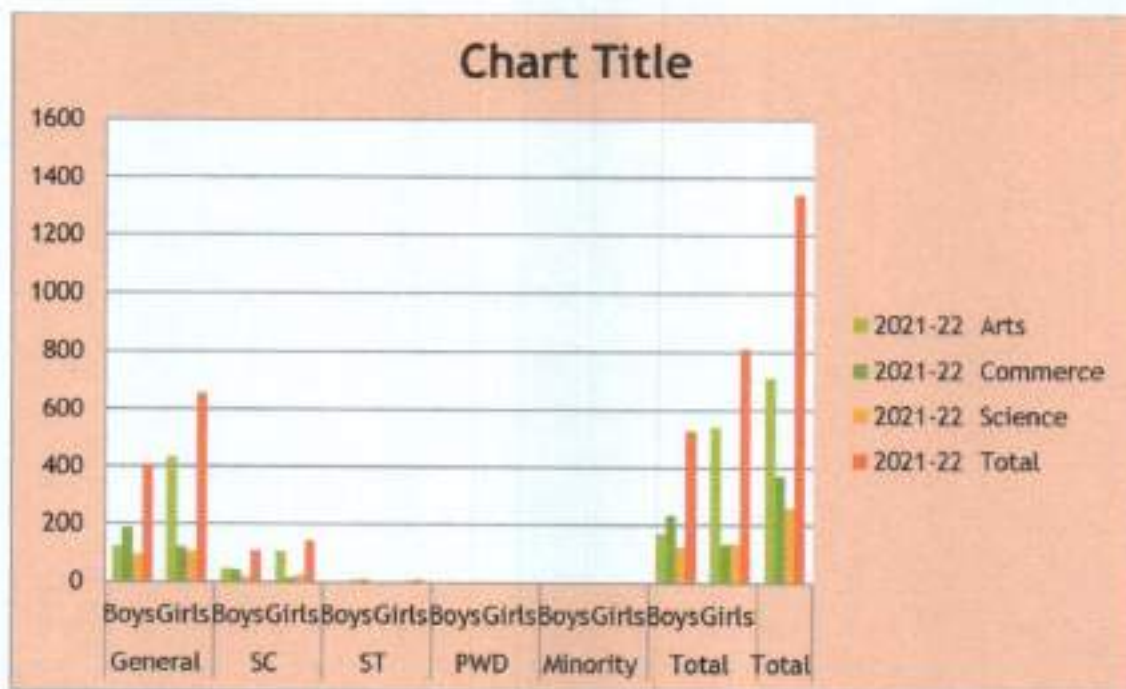
Teaching Staff		Non-Teaching Staff	
Men	Women	Men	Women
32	11	28	4



Students' Strength

Year	Stream	General		SC		ST		PWD		Minority		Total		Total
		Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	
2021-22	Arts	122	431	46	104	1	2	2	2	0	1	171	540	711
	Commerce	187	119	42	16	1	0	1	0	3	0	234	135	369
	Science	95	104	18	23	10	9	0	0	0	0	123	136	259
	Total	404	654	106	143	12	11	3	2	3	0	528	811	1339





Year	Male	Female	Total
2021-22	528	811	1339



Institution's Land Usage

The institution has a land area of 14.6 acres of its own which is surrounded with pucca boundary fully to check the free access of the trespassers to overcome any kind of huddles in its academic atmosphere. Out of this, the built up area covers 10299.23m² which includes the physical structures given in the list below to cater the need of the students as well as all other stakeholders. The rest part of the total area covers a huge playground with full of greeneries. Different gardens inside the campus enhance beauty of this campus.

2021-22

Details of physical structures	
Physical Structure	Area/No
Total Area	14.6 Acre
Built Up Area	10299.23 m ²
Class Rooms	32
Libraries	01
Administrative rooms	05
Laboratories	04
Auditoriums	01
Conference rooms	01
Staff common rooms	01
Students common rooms	02
Hostels	03
Canteens	01
Guest House	01
Post Office	01
Staff Quarter	02
Stadium	01
Security Rooms	03
Principal Quarter	01
Cycle Stand	01
Examination Cell	01
Lavatories	14

2021-22

Construction Area in Sqft.		
Specific area	Size in ft	Total area in ft ² .
Staff Common Room to Boys Lavatories	2(200 X 28)	11200
Administrative Block	2(125 X 28)	7000
Zoology Department	89 X 37	3293
Examination Hall	2(115 X 25)	5750
Room No-01 to 06	145 X 26	37770
Room No-26 & 27	64 X 27	1727
Library Hall	2(137 X 38)	10412
Chemistry, Botany & Math Laboratory	100 X 68	6800
Boys Hostel	92 X 67	6164
Principal Quarter	51 X 34	1734
Guest House	62 X 56	3472
Canteen	34 X 23	782
Old Chemistry Block	87 X 42	3650
Post Office	36 X 46	1656
New OBC Hostel	3(94 X 52)	14664
Ladies Hostel	2 (112 X 90)	20160
Staff Quarter	79 X 35	2765
Cycle Stand	35 X 18	630
Stadium	72 X 31	2232
Security 3 Nos. Room	10 X 12.5	125
	25 X 10	250
	10 X 12.5	125
Total		110860 ft² =10,299.23 m²

Establishment of Environment Management System

➤ Declaration of Environment Policy

The institution has its own environment policy to set up the targets which technically possible for the environmental protection and economically possible to create eco-friendly green environment. The different policies are mention below.

- To create the sense among staff and students for environmental protection of the society.
- To aware and educate different stake holders regarding relevant laws and regulations of environmental protection.
- To aware about planting of more number of trees and reduce fossil fuel consumption.
- To reduce energy consumption and avoid plastic based materials.
- To aware the local people by organising continuous rally with placards, posters and road show by the students.
- To avoid the burning of coal, wood, leaves, dung cake for different purposes and give more emphasis on use of natural gas.
- To dispose the particular wastes in proper manner as per the rule.

➤ **Planning of programme or activity:**

An annual plan for different environmental activities is prepare by the environment committee at the beginning of this academic year. The different stake holders such as Environment committee, NCC, NSS, YRC, and Alumni etc. are advised to perform different activities such as plantation, gardening, beautification, auction of uprooted trees, and waste disposal to adhere the environmental policy of this institution.

Implementation and Operation:

This year different stake holders of this institution actively executed the task following the annual plan of Environment committee. As per the environmental initiatives various awareness programs are organised to aware students, staffs and general public to conserve environment, plant trees, dispose wastes etc. This year various committees have planted different trees inside and outside the campus. Cleaning programs are conducted frequently to keep college campus clean. The watering of plants and garden are regularly done through supply water and harvested rain water. The waste management of the institution is properly executed as explained in the waste management.

OBJECTIVES OF GREEN AUDIT

- To raise staff awareness and enforcing commitment to environmental policy.
- To develop a basis for optimising environmental resources.
- To suggest stake holders for using alternative energy for the conservation of energy resources.
- To recognize, diagnose and resolve the environmental problems.
- To recognize the effects of the College on the environment and vice versa.
- To identify and control the impact of activities of the college on environment.
- To suggest the best protocols for sustainable environment.
- To assess environmental performance and the effectiveness of the measures to achieve the defined objectives and targets.
- To identify the different pressures on the College to improve their environmental performance.
- To ensure that the natural resources are utilized properly as per national policy of environment.
- To set the procedure for disposal of all types of harmful wastes.
- To reduce energy consumption.
- To give preference to the most energy efficient and environmentally sound appliances.
- To minimize the consumption of water and monitor its quality.
- To identify the risks of hazards and implement the policies for safety of stakeholders.
- To make sure that rules and regulations are taken care to avoid the interruptions in environment.
- To provide baseline information to enable the college to evaluate and manage environmental change, threat and risk.
- To identify the gap areas and suggest recommendations to improve the Green Campus status of the college.

- To identify different categories of solid hazardous waste, their sources, quantities and characteristics.
- To achieve the Agenda 2030 sustainable development goal of UN.

GUIDELINES

The following guidelines are framed to aware staffs and students for environmental conservation and sustainable development.

- During any welcome, farewell ceremony and any other departmental function including seminar, that single use plastic bags, bottles plastic related materials must be avoided and if any dumped in dustbins placed inside the college campus.
- Only biodegradable materials i.e. colourful papers, leaves, flowers etc. may be used for decoration purpose.
- Flower bouquet with plastic covering, plastic or any synthetic flower must be avoided. Hence flower bunch may be offered to guest and dignitaries.
- Use of platter or dishes or bowls made of Sal leaves or banana leaves are allowed during any feast.
- Instead of plastic bottle paper tumbler may be used for serving water.
- Feast premises should be cleaned and waste materials should be collected and dumped into dustbins stationed at different points.
- Plastic wrappers of chocolate, biscuit, chips breads etc. must be dumped in dustbins instead of throwing them here and there inside the college campus.
- It must be ensured that the plastic waste generated by any means should not be land filled or dumped in the college premises.

TARGET AREAS OF GREEN AUDIT

Green audit is a part of resource management process of this institution. Though is an individual event, the real value of green audit is the fact that it is carried out, at defined intervals, and their results can illustrate improvement or change over time. The concept mainly focuses on the efficient use of energy and water; minimize waste generation or pollution and also economic

efficiency. It focuses on the reduction of contribution to emissions, procures a cost effective and secure supply of energy, enhances and encourages energy conservation, promotes personal action, reduce the institute's energy and water consumption, reduce wastes to landfill, and integrate environmental considerations into all services considered to have significant environmental impacts. Target areas included in this green audit are water, energy, waste, green campus and carbon footprint.

Audit for Water Management

Water is a natural resource; all living organisms depend on water. Groundwater depletion and water contamination are taking place at an alarming rate. Hence it is essential to examine the quality and usage of water in the college. Water audit is conducted for the evaluation of facilities of raw water intake and determining the potential for water treatment and reuse. The concerned auditor investigates the relevant method that can be adopted and implemented to balance the demand and supply of water.

Audit for Energy Management

Energy conservation is an important aspect of campus sustainability which is also linked with carbon foot print of the campus. It deals with the conservation and methods to reduce its consumption related to environmental degradation. It is therefore essential that any environmentally responsible institution examine its energy use practices.

Audit for Waste Management

Human activities create waste, and it is the way these wastes are handled, stored, collected and disposed of, which can pose risks to the environment and public health. Pollution from waste is aesthetically unpleasing and results in large amounts of litter in our communities which can cause health problems. Solid waste can be divided into three categories: bio-degradable, non-biodegradable and hazardous waste. Bio-degradable wastes include food wastes, canteen waste, wastes from toilets etc. Non-biodegradable wastes include what is usually thrown away in homes and schools such as plastic, tins and glass bottles etc. Hazardous waste is waste that is likely to be a threat to health or the environment like cleaning chemicals, acids and petrol. Unscientific management of these wastes such as dumping in pits or burning them may cause harmful

discharge of contaminants into soil and water supplies, and produce greenhouse gases contributing to global climate change respectively. Special attention should be given to the handling and management of hazardous waste generated in the college. Bio-degradable waste can be effectively utilized for energy generation purposes through anaerobic digestion or can be converted to fertilizer by composting technology. Non-biodegradable waste can be utilized through recycling and reuse. Thus, the minimization of solid waste is essential to a sustainable development of the college. The prevailing waste disposal policies are assessed and suggestions made on the best way to combat the problems.

Carbon Footprint

Burning of fossil fuels (such as petrol) has an impact on the environment through the emission of greenhouse gases into the atmosphere. The most common greenhouse gases are carbon dioxide, water vapour, methane, nitrous oxide and ozone. Of all the greenhouse gases, carbon dioxide is the most prominent greenhouse gas, comprising 402 ppm of the Earth's atmosphere. The release of carbon dioxide gas into the Earth's atmosphere through human activities is commonly known as carbon emissions. Vehicular emission is the main source of carbon emission in the campus, hence to assess the method of transportation that is practiced in the college is important. This year various steps have been taken to reduce the carbon footprint. Staff and students are encouraged to use bicycles instead of motor vehicles. Every Friday this institution observes no vehicle day to attain its goal. Continuously this institution plants various trees to absorb carbon dioxide.

METHODOLOGY ADOPTED

The methodology adopted to conduct the Green Audit of the college had the following components

Onsite Visit

Three day field visit was conducted by the Green Audit Team. The key focus of the visit was on assessing the status of the green cover of the college, its waste management practices and energy conservation strategies etc.

Group Discussion

The group discussions were held with the staff members, students and the management focusing various aspects of Green Audit. The discussion was focused on identifying the attitudes and awareness towards environmental issues at the institutional and local level.

Energy, waste management and Carbon foot print analysis Survey

With the help of teachers and students, the audit team assessed the energy consumption pattern and waste generation, disposal and treatment facilities of the college. The monitoring was conducted with a detailed questionnaire survey method.

AUDIT STAGE

Green audit began with the assessment of the status of the green cover of the institution followed by waste management practices and energy conservation strategies etc. Different facilities at the college were monitored, different types of appliances and utilities (lights, taps, toilets, fridges, etc.) were determined as well as measuring the usage per item (Watts indicated on the appliance or measuring water from a tap) and identifying the relevant consumption patterns (such as how often an appliance is used) and their impacts. The audit team discussed with staffs to get details of usage, frequency or general characteristics of certain appliances.

Data are collected from various sectors such as Energy, Waste, Greening, Carbon footprint and Water use. College records and documents are verified several times to clarify the data received through survey and discussions. The samples including water, soil from various location of the campus were collected and analyzed at government recognized testing laboratories

GREEN AUDIT REPORT

Water Quality assessment

Water quality:

Water samples were collected from 4 different sites such as tube well water (boys hostel), pond water (near main building) and two bore wells of the campus and analysed for the basic

parameters by sending State Food Testing Laboratory, Bhubaneswar, Odisha whose results are given in the tabular form.

GOVERNMENT OF ODISHA
OFFICE OF THE JOINT DIRECTOR CUM CHIEF FOOD ANALYST
State Food Testing Laboratory, Convent Square, Bhubaneswar-1

No. 760/JDTA Dated Bhubaneswar the 18 th 04 '2023'

To,

The Pattamundai College
Pattamundai, Dist. Kendrapara.

Sub: - Analysis report of water Sample.

Report No.	Source: -	*Collected/*Sent by	Reference No. & Date of Collection/Receipt	Date of Examination
328/23	Borewell Water-1 Staff Common Room	The Pattamundai College	20.03.23	20.03.23

Chemical and Bacteriological Examination of water samples

The sample of water from above source has been caused to be analysed as per the specification of Indian Standard of drinking water under IS: 10500:2012 and the findings are as under:

Physical Examination				Chemical Examination			
Sl. No.	Test/Characteristic	Result	Permissible Limit as per IS: 10500:2012	Sl. No.	Test/Characteristic	Result mg./ltr (ppm)	Permissible Limit as per IS: 10500:2012
1	Colour	Nil	Agreeable	1	Total hardness as CaCO ₃ (mg/l)	82	200 mg/l Max.
2	Odour	Nil	Agreeable	2	Iron (as Fe) (mg/l)	Nil	1.0 mg/l Max.
3	Turbidity	Nil	1 NTU max.	3	Chloride (as Cl ⁻) (mg/l)	52	250 mg/l Max.
4	pH	7.6	6.0 to 8.5	4	Residual free Chlorine (mg/l)	Nil	0.2 mg/l Max.
Bacteriological Examination				5	Sulphate as SO ₄ (mg/l)	Nil	200 mg/l Max.
Sl. No.	Test/Characteristic	Result	Permissible Limit as per IS: 10500:2012	6	Total Alkalinity (as HCO ₃ ⁻) (mg/l)	116	200 mg/l Max.
1	MPN of coli form group of organisms Per 100 ml	-----	-----	7	Nitrate (as NO ₃ ⁻)	Nil	45 mg/l Max.
2	Test for E. coli.	-----	-----	8	Total Dissolved Solid (mg/l)	250.50	500 mg/l Max.
				9	Nitrite (as NO ₂ ⁻)	Nil	0.02mg/l Max.

Remarks: - The water sample is Chemically Satisfactory on the basis of test performed.

Dated:
State Food Testing Laboratory
Bhubaneswar-1

(Signature)
Food Analyst
GOVT. OF ODISHA
Food Analyst
Govt. of Odisha

GOVERNMENT OF ODISHA
OFFICE OF THE JOINT DIRECTOR CUM CHIEF FOOD ANALYST
State Food Testing Laboratory, Convent Square, Bhubaneswar-1

No. 761/JDCFA Dated Bhubaneswar the 16 th 04 '2023'

To,

The Pattamundai College
Pattamundai, Dist. Kendrapara.

Sub: -Analysis report of water Sample.

Report No.	Source :-	*Collected/*Sent by	Reference No.& Date of Collection/Receipt	Date of Examination
329/23	Borewell Water-2 Student Common Room	The Pattamundai College	20.03.23	20.03.23

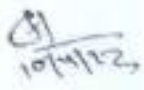
Chemical and Bacteriological Examination of water samples

The sample of water from above source has been caused to be analysed as per the specification of Indian Standard of drinking water under IS: 10500:2012 and the findings are as under:

Physical Examination				Chemical Examination			
Sl. No.	Test/Characteristic	Result	Permissible Limit as per IS:10500:2012	Sl. No.	Test/Characteristic	Result mg./ltr (ppm)	Permissible Limit as per IS:10500:2012
1	Colour	Nil	Agreeable	1	Total hardness as CaCO ₃ (mg/l)	76	200 mg/l Max.
2	Odour	Nil	Agreeable	2	Iron (as Fe) (mg/l)	Nil	1.0 mg/l Max.
3	Turbidity	Nil	1 NTU max.	3	Chloride (as Cl ⁻) (mg/l)	60	250 mg/l Max.
4	pH	7.6	6.0 to 8.5	4	Residual free Chlorine (mg/l)	Nil	0.2 mg/l Max.
Bacteriological Examination				5	Sulphate as SO ₄ (mg/l)	Nil	200 mg/l Max.
Sl. No.	Test/Characteristic	Result	Permissible Limit as per IS:10500:2012	6	Total Alkalinity (as HCO ₃ ⁻) (mg/l)	130	200 mg/l Max.
1	MPN of coli form group of organisms Per 100 ml	-----	-----	7	Nitrate (as NO ₃ ⁻)	Nil	45 mg/l Max.
2	Test for E. coli.	-----	-----	8	Total Dissolved Solid (mg/l)	410.70	500 mg/l Max.
				9	Nitrite (as NO ₂ ⁻)	Nil	0.02mg/l Max.

Remarks: - The water sample is Chemically Satisfactory on the basis of test performed.

Dated:
State Food Testing Laboratory,
Bhubaneswar-1


Food Analyst
GOVT. OF ODISHA
Food Analyst
Govt. of Odisha

GOVERNMENT OF ODISHA
OFFICE OF THE JOINT DIRECTOR CUM CHIEF FOOD ANALYST
State Food Testing Laboratory, Convent Square, Bhubaneswar-I

No. 762/JDCFA Dated Bhubaneswar the 10 th 04 '2023'

To,

The Pattamundai College
Pattamundai, Dist. Kendrapara.

Sub: -Analysis report of water Sample.

Report No.	Source :-	*Collected/*Sent by	Reference No.& Date of Collection/Receipt	Date of Examination
330/23	Borewell Water-3 Girl's Hostel	The Pattamundai College	20.03.23	20.03.23

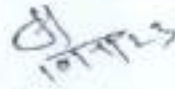
Chemical and Bacteriological Examination of water samples

The sample of water from above source has been caused to be analysed as per the specification of Indian Standard of drinking water under IS: 10500:2012 and the findings are as under:

Physical Examination				Chemical Examination			
Sl. No.	Test/Characteristic	Result	Permissible Limit as per IS: 10500:2012	Sl. No.	Test/Characteristic	Result mg./lts (ppm)	Permissible Limit as per IS: 10500:2012
1	Colour	Nil	Agreeable	1	Total hardness as CaCO ₃ (mg/l)	74	200 mg/l Max.
2	Odour	Nil	Agreeable	2	Iron (as Fe) (mg/l)	Nil	1.0 mg/l Max.
3	Turbidity	Nil	1 NTU max.	3	Chloride (as Cl ⁻) (mg/l)	48	250 mg/l Max.
4	pH	7.6	6.0 to 8.5	4	Residual free Chlorine (mg/l)	Nil	0.2 mg/l Max.
Bacteriological Examination				5	Sulphate as SO ₄ ⁻² (mg/l)	Nil	200 mg/l Max.
Sl. No.	Test/Characteristic	Result	Permissible Limit as per IS: 10500:2012	6	Total Alkalinity (as HCO ₃ ⁻) (mg/l)	126	200 mg/l Max.
1	MPN of coli form group of organisms Per 100 ml	-----	-----	7	Nitrate (as NO ₃ ⁻)	Nil	45 mg/l Max.
2	Test for E. coli.	-----	-----	8	Total Dissolved Solid (mg/l)	378.00	500 mg/l Max.
				9	Nitrite (as NO ₂ ⁻)	Nil	0.02mg/l Max.

Remarks: - The water sample is Chemically Satisfactory on the basis of test performed.

Dated:
State Food Testing Laboratory
Bhubaneswar-I


Food Analyst
GOVT. OF ODISHA

Food Analyst
Govt. of Odisha

Water Management

The institution has its own water management system. There are two deep bore wells with two submersible pumps of capacity 2 hp and 1 hp each which meet all water needs of the college. The distribution of water is properly done to different places as per the requirements. Different overhead tanks are available in different parts of the college to meet these requirements. There are 13 water purifiers and 2 cooler at different parts of the college to overcome the drinking water of the different stakeholders. The waste water obtained from different parts is well managed by watering the plants, ponds as well as sumps. The college has access to the municipality supply water and also used as per the need. Rain water harvesting system is also managed properly to water the plants and rest stored in the ponds. There is a Well in the college which is used to recharge ground water. The ponds are cleaned time to time for the pisciculture which add some funds to the college and consume biodegradable wastes left to the ponds through rain as well as waste water.

Sl. No	Parameters	Response	Remarks
1	Source of water	Bore Well with submersible pump, Municipality water, Ponds	Bore Well-02 Ponds -02
2	No of wells	01	Available but not in use (Location- Physics Department back side)
3	No of motors used	02	
4	Horse power (motor)	2 hp and 1 hp each	Total Quantity -02
5	Depth of well	20 feet	
6	Water level	10 feet	
7	No of water tanks	20	
8	Capacity of tank	18,000 L	$2000\text{ L} \times 4 = 8000\text{ L}$ $750\text{ L} \times 4 = 3000\text{ L}$ $1000\text{ L} \times 6 = 6000\text{ L}$ $500\text{ L} \times 2 = 1000\text{ L}$

9	Qty of water pumped everyday	12,000 L	
10	No of ponds	02	Near College Canteen-01 Boys Hostel -01
11	Any water wastage/ why?	No	
12	Water usage for gardening	Yes	
13	Waste water sources	1) Lavatory College Office & Building 2) Laboratory (Physics, Chemistry, Zoology & Botany) 3) Water Cooler & Water Purifiers. Outlet 4) Boys & Girls Hostel, Toilets, Kitchen & Wash basin outlet	
14	Use of waste water	Gardening, Plantation & Drained to ponds for storage.	
15	Fate of Waste Water from Labs	Soak pits are made at their outlet to absorb within	
16	Whether waste water from labs mixed with ground water	No	Absorbed fully within the soak pits.
17	Whether any Green chemistry method Practiced in labs	No	
18	Any treatment of lab water	No	Only absorbed through soak pits.
19	No of water coolers	01+13 =14	01-Water Cooler 11-Kent RO water Purifier 02-UV water purifiers
20	Rain water Harvest available?	Yes	

21	No of units and amount of water harvested	10 Units	As all were recently installed, no data recorded yet.
22	Any leaky taps	No	
23	Amount of water lost per day	Nil	
24	Any water management plant used	No	
25	Any water saving techniques followed	Yes	1. Urinals are equipped with push pull angle cocks to prevent wastage of water. 2. Overhead water tanks connected with ball cock to prevent water spillages automatically 3. Rain Water Harvester installed
26	Are there any signs reminding people to turn off the water		1. Overhead tanks are also connected with drain Pipes in case water fall on ground because of faulty ball cock.

Soil Quality Assessment

Soil samples were collected from four locations such as ornamental garden, playground, herbal garden and back side of the main building plantation area of the campus and analysed the basic Parameters Krushi Vigyan Kendra, Kendrapara, Odisha. The results are tabulated and presented in the table.



OFFICE OF THE PRINCIPAL

Mobile : 9437376724

PATTAMUNDAI COLLEGE

NAAC ACCREDITED B GRADE

PATTAMUNDAI, KENDRAPARA, ODISHA - 754215

Ref No. 478

Date 12/04/2023

To

**The Assistant Director of Agriculture
Soil testing Laboratory,
Kendrapara.**

Sub: **Request for testing the soil samples for Green Audit of Pattamundai College, Pattamundai.**

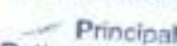
Sir,

It is my sincere request you to cooperate us to test the different parameters of four soil samples of Pattamundai College premises sent by us in your laboratory, which is given in the separate sheet for the smooth conduct of Green Audit of this institution with a nominal charge. It will be also manageable if there are some modifications in methods of testing and units. The collected samples are enlisted below for your ready reference.

Your cooperation in this regard is highly appreciated.

Thanking you.

Sample1:- Orchard
Sample2:- Ornamental garden
Sample3:- Herbal garden
Sample4:- Ladies Hostel


**Principal
Pattamundai College**

**Principal
Pattamundai College**

www.pattamundaicollege.ac.in,
E-mail : pattamundaicollege@gmail.com, pattamundaicollege@yahoo.com

Soil Sample Test Report															
Sample-1				Sample-2				Sample-3				Sample-4			
Sl. No.	Parameter Name	Test result	Remark	Sl. No.	Parameter Name	Test result	Remark	Sl. No.	Parameter Name	Test result	Remark	Sl. No.	Parameter Name	Test result	Remark
1	pH	7.26	Common	1	pH	6.25	Common	1	pH	5.51	Acidic	1	pH	6.15	Acidic
2	EC	0.852	Common	2	EC	0.02	Common	2	EC	0.731	Common	2	EC	0.749	Common
3	OC	0.39	Low	3	OC	0.42	Low	3	OC	0.25	Low	3	OC	0.24	Low
4	K	113.49	High	4	K	122.22	Medium	4	K	72.75	Medium	4	K	10.84	Medium
5	P	183.8	Very High	5	P	124.5	Very High	5	P	40.5	High	5	P	44.4	High
6	N	287.8	Low	6	N	135.4	Low	6	N	191.4	Low	6	N	174	Low
7	S	8.39	Low	7	S	11.04	Medium	7	S	5.92	Low	7	S	3.65	Low
8	B	0.14	Low	8	B	0.1	Low	8	B	0.08	Low	8	B	0.05	Low
9	Cu	0.092	Very Low	9	Cu	0.101	Low	9	Cu	0.17	Low	9	Cu	0.205	Medium
10	Zn	0.299	Very Low	10	Zn	0.272	Very High	10	Zn	0.241	Very Low	10	Zn	0.289	Very Low
11	Fe	4.227	Low	11	Fe	4.73	Medium	11	Fe	8.403	Medium	11	Fe	5.176	Medium
12	Mn	1.579	Low	12	Mn	1.116	Low	12	Mn	1.719	Low	12	Mn	1.081	Medium

Amrut Bai
24/4/23
Technical Asstt of STL

11/4/23
24/4/23
Assistant Director Agriculture
Soil Chemist (STL)
Kendrapara

100 GREEN / 100% GREEN

Energy Audit Report: -

The consumption of electricity is varied with the addition / modification of different items/ instruments. The institution is equipped with modern / updated electric appliances such as 5star rated instruments LED tube and bulbs to reduce the energy consumption. It also tried to add solar energy system to further save and use of green energy.

Data Sheet for Energy Audit of the Session: 2021-22

RoomNo./Name	Electrical device/ Items(Bulbs: CFL/ Incandescent/ Computer, appliances)	Number	Power	UsageTime(Hr/D ay)
IQAC	Fan	2	140	5
	LED	3	36	5
	Desktop	2	440	5
	Laptop	1	150	5
	AC	1	1500	2
	Printer	2	440	5
Principal'sOffice	Fan	3	210	7
	LED	3	36	7
	Laptop	1	150	7
Principal'sRestRoom	Fan	1	70	5
	LED	3	36	5
	Desktop	1	220	5
	CCTVDVR	1	220	24
	AC	1	1500	2
	Printer	1	220	5
	Refrigerator	1	125	24
AccountSection	Fan	2	140	7
	LED	4	48	7
	Desktop	1	220	7
	Printer	2	220	5
AdministrativeOffice	Fan	2	140	7
	LED	8	96	7
	Desktop	1	220	7
	Printer	1	220	5
OfficeVeranda	Tube Light	4	48	5
StaffCommonRoom	Fan	8	560	7
	LED	16	240	7
	AC	3	4500	3
	WaterPurifier	1	30	24

ExaminationSection	Fan	8	560	5
	Tube Light	9	360	5
	Desktop	1	220	5
SAMS	Fan	1	70	5
	Tube Light	2	80	5
	Desktop	3	220	5
	Xerox	1	350	5
EducationSeminar	Fan	3	210	5
	Tube Light	3	120	5
	Laptop	1	150	5
EconomicsSeminar	Fan	3	210	5
	Tube Light	3	120	5
	Laptop	1	150	5
	Printer	1	220	5
SociologySeminar	Fan	2	140	5
	Tube Light	2	80	5
	Laptop	1	150	5
EnglishSeminar	Fan	1	70	5
	Tube Light	1	40	5
	Laptop	1	150	5
	Printer	1	220	5
PhilosophySeminar	Fan	2	140	5
	Tube Light	1	40	5
	Laptop	1	150	5
VocationalOffice	Fan	1	70	5
	Tube Light	2	80	5
Odia Seminar	Fan	3	210	5
	Tube Light	2	80	5
HistorySeminar	Fan	3	210	5
	Tube Light	3	120	5
	Desktop	1	220	5
PoliticalScience Seminar	Fan	3	210	5
	Tube Light	3	120	5
	Laptop	1	150	5
CommerceSeminar	Fan	3	210	5
	Tube Light	4	160	5
	Laptop	1	150	5
LadiesCommonRoom	Fan	2	14	5
	Tube Light	6	240	5
	Fan	9	630	5
ZoologyDepartment	Tube Light	10	400	5
	Laptop	1	150	5

	LED	6	72	5
MotorRoom	Motor	1	1492	4
	Bulb	1	40	4
ClassRoomNo08	Fan	8	560	5
	LED	4	60	5
ClassRoomNo10	Fan	4	280	5
	LED	3	45	5
ClassRoomNo09	Fan	1	70	5
	LED	1	15	5
ClassRoomNo07	Fan	2	140	5
	LED	2	30	5
ClassRoomNo14	Fan	1	70	5
	LED	1	15	5
ClassRoomNo15	Fan	1	70	5
	LED	1	15	5
ClassRoomNo16	Fan	6	210	5
	LED	3	45	5
ClassRoomNo17	Fan	1	70	5
	LED	1	15	5
ClassRoomNo18	Fan	1	70	5
	LED	1	15	5
ClassRoomNo19	Fan	1	70	5
	LED	1	15	5
ClassRoomNo20	Fan	6	420	5
	LED	3	45	5
ClassRoomNo21	Fan	8	560	5
	LED	4	60	5
ClassRoomNo23	Fan	6	420	5
	LED	3	45	5
ClassRoomNo24	Fan	2	140	5
	LED	2	30	5
ClassRoomNo25	Fan	10	700	5
	LED	5	75	5
PhysicsDepartment	Fan	9	630	5
	LED	13	295	5
	Desktop	1	220	5
	Water Purifier	1	30	24
	Refrigerator	1	125	24
	Printer	1	220	5
BotanyDepartment	Fan	11	770	5
	LED	7	140	5
	Desktop	1	220	5

	Water Purifier	1	30	24
	Refrigerator	1	125	24
Mathematics Department	Fan	4	280	5
	LED	6	9	5
	Desktop	6	1320	5
	Printer	1	220	5
Chemistry Department	Fan	12	840	5
	LED	3	45	5
	Tube light	7	280	5
Library	Fan	25	1750	5
	Tube Light	13	520	5
	LED	20	300	5
	Desktop	3	660	5
	Printer	1	220	5
Boys Hostel	Fan	12	840	5
	Tube Light	16	192	5
	LED	11	132	5
Ladies Hostel	Fan	24	1680	5
	Tube Light	25	1000	5
Auditorium Hall	Fan	24	1680	1
	LED	20	240	1
	LED Halogen	03	60	1
	Sound System	01	250	1

Annual Electricity Bill:

2021-22: **Rs81, 681/-**

Environmental Committee, Pattamundai College

The total energy utilization of the college for different purposes is approximately **1484.91 units/month**. Increased production of solar energy a type of nonconventional category of energy will be a good energy management system for the college. Electricity charges per month are **Rs. 6979.56/month** averaged over a year. Energy efficient electrical equipment especially fans and pump sets can be replaced against old ones. 5-star rated electrical appliances must be replaced against the old appliances. Awareness programs for the stakeholders to save energy may also increase sustainability in the utilization of various energy sources.

Availability of solar power with details:

The college has installed a luminous PCU 7.5 KVA in view of conserving conventional energy and switched over to green energy to create not only eco- friendly campus but also generate revenue for the institution. The inverter is installed in the corridor of main building where main drain of current is carried out.

Waste Management

Maintaining a clean college environment sets a good example to students. It encourages learners to take pride in their university or college, which makes them less likely to drop litter as such they will potentially make a bigger effort to maintain their environment. In a college different types of wastes are generated, its collection and management are very challenging. The following data reflects the details of the waste generated and the disposal method adopted by the college.

Waste Management for the session 2021-22

Approximate quantity of waste generated per day (in kg)

Approx.	Biodegradable	Non-biodegradable	Hazardous	Others
Office				
<1 Kg	√	√	Nil	Nil
2-10 Kg				
>10 Kg				
Laboratories				
<1 Kg	√	√	Nil	Nil
2-10 Kg				
>10 Kg				
Canteen/ Kitchen				
<1 Kg		√	Nil	Nil
2-10 Kg				
>10 Kg	√			

Waste generated in the College

Types	Yes/ No	Remark
E-waste	No	No E-waste been generated in these sessions
Hazardous waste	Yes	Hazardous wastes generated from different laboratories are well managed by dumping in sealed sump.
Solid waste	Yes	The Biodegradable solid wastes are consumed for Vermi composting purpose and Non- biodegradable wastes are handed over to municipality through its regular collection vehicle.
Dry leaves	Yes	Used for Vermi composting purpose.
Canteen	Yes	The waste generated from the canteen is disposed as mentioned in the above process.
Liquid waste	Yes	All types of liquid wastes are used for gardening, plantation and pond watering
Glass	Yes	As this is treated as solid waste, it is handed over to municipality for its proper disposal.
Unused equipment	Yes	Disposed as E-Waste
Napkins	Yes	Biodegradable and disposed
Others (specify)	-	

Green Campus

Environment Committee, Pattamundai College

The institution is sincerely concerned about the environmental pollution too early for which many timber yielding plants as well as medicinal plants were planted in the campus since 1990. This is a continuous practice of this institution for which it has reached around 4000 trees of different kinds. It not only reduces the greenhouse gases but also supplies huge amount of oxygen to create an eco-friendly environment. The Google earth picture and detailed list of plants are given below for the information. As this is a cyclone prone area, almost every year the institution suffers loss of some trees which is used for the generation of funds by selling the broken trees. The details of fund generation in different years are given in annexure- V.

List of plants in the campus: 2021-22

Sl.No	Botanical Name	Common Name	Number
1	Ficus benghalensis	Bara	1
2	Cedrus deodara	Debadaru	99
3	Terminalia arjuna	Arjuna	300
4	Syzygiumcumini	Jamu	13
5	Emblica officinalis	Amla	10
6	Callistemon citrinus:	Bottle brush	4
7	Alstoniascholaris	Chhatiana	20
8	Azardidichta indica	Nimba	230
9	Millettia pinnata	Karanja	235
10	Bombax ceiba	Simili	10
11	Simarouba glauca	Simrua	110
12	Saracaasoca	Asoka	10
13	Phoenix dactylifera	Khajuri	35
14	Neolamarckiacadamba	Kadamba	10
15	Melia azedarach	Mahanimba	20
16	Cocus nucifera	Nadia	47
17	Syzygium austral	Australian Cherry	8
18	Terminalia bellirica	Bahada	1
19	Swietenia macrophylla	Mahogany	106
20	Artocarpus heterophyllus	Panasa	8
21	Hevea brasiliensis	Rubber	1
22	Mangifera indica	Amba	20
23	Dalbergia sisso	Sisu	41
24	Tectona grandis	Saguan	262

25	Roystonea regia	Areca palm	17
26	Ficus carica	Dimiri	6
27	Acacia auriculiformis	Akasia	11
28	Psidium guava	Pijuli	15
29	Albizia lebbbeck	Sirisa	25
30	Casuarina equisetifolia	Jhaun	45
31	Magnolia Champaka	Swarna champa	11
32	Dellenia indica	Ou	10
33	Terminalia catappa	Katha badam	27
34	Streblus asper	Sahada	18
35	Delonix regia	Krushnachuda	20
36	Caesalpinia pulcherrima	Radhachuda	15
37	Mimusops elengi	Baula	25
38	Gmelina arborea	Gambhari	19
39	Aegle marmelos	Bela	8
41	Diospyros melanoxylon	Kendu	7
42	Schleichera oleosa	Kusum	1
43	Annona reticulata	Aata	1
44	Eucalyptus radiata	Eucalyptus	2225
45	Samanea saman	Chakunda	15
46	Annona squamosa	Neua	1

Total= 4124

No of trees planted:

Session	No. of trees planted	No. of trees broken	Total no. of trees
2021-22	96	12(Due to cyclone)	4124

No of gardens:

Garden Types	Number
Ornamental Garden	02
Medicinal Garden	01
Orchards	01
Others	01

List of Medicinal plants in herbal garden of Pattamundai College

SLNo	Common Name	Botanical Name
1	Amla	Phyllanthus emblica
2	Bela	Aegle marmelos
3	Gangasuli	Nictanthesarbor-tristis
4	Amarpoi	Kalanchoe pinnata
5	Manjuati	Lawsoniainermis
6	Bahada	Terminalia bellirica
7	Mandara	Hibiscus rosa-sinensis
8	Dhanwantari	Cymbopoganflexuosus
9	Pipali	Piper longum
10	Tulasi	Ocimum sanctum
11	Ghritkumari	Aloe vera
12	Badiamla	Phyllanthus fraternus
13	Satabari	Asparagus racemosus
14	Brahmi	Bacopa monnieri
15	Dayana	Artemisia vulgaris
16	Rukuna	Coleus barbatus

17	Banadhania	<i>Eryngium foetidum</i>
18	Karpuratulasi	<i>Ocimumkilimandscharicum</i>
19	Chireita	<i>Andrographis paniculata</i>
20	Pasaruni	<i>Paederiafoetida</i>
21	Salaparni	<i>Desmodiumgangeticum</i>
22	Ramatulasi	<i>Ocimumgratissimum</i>
23	Satabari	<i>Asparagus racemosus</i>
24	Gugula	<i>Commiphoracaudata</i>
25	Agaru bacha	<i>Alpina galanga</i>
26	Ankaranti	<i>Cauroupitaguianensis</i>
27	Dalchini	<i>Cinnamomum verum</i>
28	Tejapatra	<i>Cinnamomum tamala</i>
29	Kanchana	<i>Bauhinia variegata</i>
30	Insulin	<i>Costusigneus</i>

31	Thalkudi	<i>Centella asiatica</i>
32	Pana	<i>Piper betle</i>
33	Kanaka champa	<i>Pterospermumacerifolium</i>
34	Kaladudura	<i>Datura metel</i>
35	Anatamula	<i>Hemidesmus indicus</i>
36	Annapurna	<i>Pandanus amaryllifolius</i>
37	Arsha	<i>Crinum asiaticum</i>
38	Aswagandha	<i>Withaniasomnifera</i>
39	Bacha	<i>Acorus calamus</i>
40	Bajramuli	<i>Sida cordifolia</i>
41	Bhrungaraj	<i>Wedelia chinensis</i>
42	Brudhadaraka	<i>Argyrea nervosa</i>
43	Dhalaarakha	<i>Calotropis procera</i>
44	Durlava	<i>Ocimumbasilicum</i>
45	Golamaricha	<i>Piper nigrum</i>
46	Guluchi	<i>Tinospora cordifolia</i>
47	Hadajoda	<i>Cissus quadrangularis</i>
48	Hemasagar	<i>Kalanchoe lanceolate</i>
49	Keukeua	<i>Costus speciosus</i>
50	Sarpagandha	<i>Rauwolfia serpentina</i>
51	Pipermint	<i>Mentha arvensis</i>
52	Raktakhai	<i>Ventilagamadrassapatana</i>
53	Sadabihari(Dhala)	<i>Catharanthus pusillus</i>
54	Patalagaruda	<i>Rauwolfia tetraphylla</i>
55	Stevia	<i>Stevia rebaudiana</i>
56	Akarakara	<i>Spilanthes calva</i>
57	Amba ada	<i>Curcuma amda</i>

58	Bisalyakarani	<i>Tridax procumbens</i>
59	Ayapan	<i>Eupatorium ayapana</i>
60	Koilikhia	<i>Hygrophylla auriculata</i>
61	Lajakuli	<i>Mimosa pudica</i>
62	Madaranga	<i>Alternanthera sessilis</i>
63	Pitasaga	<i>Glinus oppositifolius</i>
64	Antamula	<i>Hemidesmus indicus</i>
65	Antamuli	<i>Tylophora indica</i>
66	Aparajita(Dhala)	<i>Clitoria ternatea</i>
67	Aparajita(Kala)	<i>Clitoria pusilla</i>
68	Dahadahia	<i>Ipomoea reniformis</i>
69	Gudumari	<i>Gymnema sylvestre</i>
70	Multivitamin green	<i>Sauropus androgynus</i>
71	Loni	<i>Morinda citrifolia</i>
72	Kalama	<i>Ipomoea aquatica</i>
73	Sadabihari(violet)	<i>Catharanthus roseus</i>
74	Apamaranga	<i>Achyranthes aspera</i>
75	Kala arakha	<i>Calotropis gigantea</i>
76	Brahmajasti	<i>Clerodendrum serratum</i>
77	Gayasa	<i>Leucas aspera</i>
78	Raktachita	<i>Plumbago indica</i>
79	Swetachita	<i>Plumbago zeylanica</i>
80	Paunsia	<i>Aerva lanata</i>
81	Talamuli	<i>Curculigo orchioides</i>
82	Bena	<i>Vetiveria zizanioides</i>
83	Gada	<i>Diospyros sylvatica</i>
84	Krushna parni	<i>Uraria picta</i>
85	Gandhasunthi	<i>Kaempferia galanga</i>
86	Sunusunia	<i>Marsilea quadrifolia</i>
87	Swetachandana	<i>Santalum album</i>
88	Raktachandana	<i>Pterocarpus santalinus</i>
89	Nagachampa	<i>Couroupita guianensis</i>
90	Bhadraksya	<i>Guzuma ulmifolia</i>
91	Banapija	<i>Urginea dubius</i>
92	Biribiri	<i>Spilanthes paniculata</i>
93	Kalahaladi	<i>Curcuma caesia</i>
94	Methi	<i>Trigonella foenum-graecum</i>
95	Bathua	<i>Chenopodium album</i>
96	Bhuinamla	<i>Phyllanthus niruri</i>
97	Ambiliti	<i>Oxalis pes-caprae</i>
98	Mashaparni	<i>Teramnus labialis</i>
99	Sankhapushpi	<i>Evolvulus alsinoides</i>
100	Olatakamala	<i>Abroma augustum</i>

101	Kamcha	<i>Mucuna radians</i>
102	Podina	<i>Mentha arvensis</i>
103	Kala tulasi	<i>Ocimumtenuiflorum</i>
104	Queen Pineapple	<i>Ananas comosus</i>
105	Brajamalli	<i>Clerodendronchinense</i>
106	Gobinda garuda	<i>Trewianudiflora</i>
107	Akadia	-
108	Akalmundi	-
109	-	<i>Aclema radicans</i>

Plantation of Medicinal herbs by students of Botany dept.



Environment Committee, Pattamundai College
Go green Think green



Herbal Garden

Routine Green Practices: Celebration of important days

The institution observed the following important days during this year to aware and perform the activities by the different stakeholders.

Sl. No.	Important days	Activities
1	National Youth Day	Awareness
2	Republic Day	Campus Cleaning and Awareness
3	World Sustainable Energy Day	Energy Saving Awareness
4	World Wildlife Day	Plantations and Awareness
5	Gopabandhu Jayanti	Campus Cleaning and Awareness
6	World Water Day	Water Conservation Awareness
7	World Earth Day	Campus Cleaning
8	NSS Day	Campus Cleaning and Social work
9	World Environment Day	Plantations and Awareness

10	NCC Day	Parade, Campus Cleaning and Awareness
11	Gandhi Jayanti	Campus Cleaning and Awareness

CARBON FOOTPRINT ANALYSIS

Carbon footprint analysis is a method of quantifying the total amount of carbon dioxide and other greenhouse gases that are emitted into the atmosphere as a result of an individual's, organization's or product's activities. It is expressed in terms of the equivalent amount of carbon dioxide (CO₂) is produced. The calculation takes into account the emissions from transportation, energy usage, waste, and other sources. Burning of fossil fuels such as petrol has an impact on the environment through the emission of greenhouse gases into the atmosphere; of these carbon dioxide is the most prominent greenhouse gas, comprising 402 ppm of the Earth's atmosphere. The release of carbon dioxide gas into the Earth's atmosphere through human activities is commonly known as carbon emissions in which the vehicular emission and burning of natural gas are the main sources in the campus. As this is a rural based institution, maximum stakeholders use public transport as well as own cycle through which release of greenhouse gases is minimised. This year various steps have been taken to reduce the carbon footprint. Staff and students are encouraged to use bicycles instead of motor vehicles. Every Friday this institution observes no vehicle day to attain its goal. Continuously this institution plants various trees to absorb carbon dioxide. The natural gas used by different laboratories, hostels and canteen are very less which contribute very less greenhouse gas for environment pollution. As there are around 4000 of trees are present in the campus this not only balances the greenhouse gases but also supplies a huge amount of oxygen to the atmosphere to make an eco-friendly environment.

Sl No	Particulars	Numbers
1	No of cycles used in college by stakeholders	700
2	No of two wheelers used Average Distance Travelled : Quantity of Fuel Amount used per day	50 5 K.M 5 L Rs 500/-
3	Electronic Vehicle (Two Wheelers)	02
4	No of cars used Average Distance Travelled : Quantity of Fuel Amount used per day	03 15 K.M 6 L Rs 618/-
5	No of persons using public transportation	850

6	No of persons using college conveyance	-
7	No of generators used per day	Rarely used as institution has inverter systems in different parts.
8	Amount of fuel used for generators per day	-
9	No of LPG cylinders used in canteen/ labs	07 Canteen - 01 Hostel - 02 Lab- 04
10	Use of any other fossil fuels in the college	-
11	Any suggestions/ planning to reduce the use of fuel	Use of electronic vehicle should be encouraged

ACTIVITIES

This institution conducts various activities related to environmental issues that are currently prevailing in our world, and different environmental policies adapted time to time. The vision of such activities is to create a cleaner, greener and a more sustainable environment by its preservation and conservation. All the activities were performed by various committees, departments, NCC-units, NSS units and YRC unit individually throughout this year.

Sl.No.	Date	Name of the Activity	No. of Student	Remark
1	5 th June 2021	World Environment Day	52	A placard Rally for Plantation and protection of trees was organised.
2	14 th August 2021	Campus cleaning	All NCC and NSS units	A mass campus cleaning drive was performed on eve of Independence Day
3	2 nd October 2021	Girl's Hostel campus cleaning	All the boarders	Under 'Swachh Bharat' initiative, all the boarders

		and plantation	of Girls Hostel	of girl's hostel cleaned their hostel premises followed by plantation.
4	11 th to 17 th October 2021	Puja Vacation special camp	56	People of locality were aware to obey COVID- 19 guidelines, issued by WHO. Beside this student engaged themselves in campus cleaning and plantation programme.
5	3 rd March 2022	World Wild Life Day	63	Students were informed regarding climate change and its immediate effect on eco-system and how to maintain the balance of nature for a sustainable environment
6	8 th March 2022	National level Webinar on recent advances in green Chemistry and its applications	112	Students learnt, how green Chemistry and its applications in Organic synthesis leads to a cleaner and safer environment.
7	22th March 2022	World Water Day	48	How ground water level is depleting in an alarming manner and how to tackle such situation were well explained to the students.

Environment Committee, Pattamundai College
Go green Think green

GALLERY



Administrative Building Gate



(Pre Audit Meeting by Principal and Green Audit Committee Member)



Ornamental Gardens



Tree Enumeration by staff and students of Botany Dept.



Orchard



Plantation on the eve of Foundation Day



Azolla and Vermicompost



College Playground



Placard Rally and campus cleaning by our students



Campus cleaning and Green Chemistry Webinar



COVID-19 Awareness among local People and Mass Campus cleaning



Observation of World Water Day and World Wild Life Day





(THE GREEN AUDIT COMMITTEE PRESENTING THE GREEN AUDIT REPORT 2021-22 TO THE SRI SUDARSHAN YADAV IFS, DFO, MANGOROVE FOREST DIVISION(WL) RAJNAGAR ON 2nd AUGUST 2023)

MAJOR AUDIT OBSERVATIONS

- The college has developed its own environmental policy.
- The college has developed very good greenery in the campus. Almost all the available spaces have been planted with trees.
- Gardens are well maintained. It is good to have an herbal garden which would boost the knowledge of staff, students and visitors on medicinal plants.
- Purchase policy should be developed to procure environment friendly items.
- Programmes on green initiatives have to be increased.
- More numbers of dustbins must be placed throughout college premises.

Water Management

- The water sources are safe in terms of contamination.
- The college at present does not have waste water treatment for waste water generated from laboratories and other sources.
- Per day consumption of water is very high.
- Measurement of quantity of water obtained from rain water harvesting should be done.
- More numbers of Rain water harvesters must be installed.

Energy Management

- Monthly use of electricity in the college is very high. As expansion is going on, the consumption would further increase.
- The communication process for awareness in relation to energy conservation is inadequate.
- Solar cell based street light must be installed throughout college premise to cut down electricity bill.

Waste Management

- The college has proper communication with the local body for regular collection of solid waste from the college.
- E-waste disposal has been done properly as per procedure.
- Hazardous waste management need to be re-visited and local municipal body be consulted for its proper disposal.
- Students are encouraged to use dustbins.

Carbon Foot Print Audit

- Motorized vehicles are not more in number in comparison to the strength of staff and students.
- Use of inverters has reduced consumption of fossil fuel for functioning of college.
- Use of gas cylinder is moderate.
- All the stakeholders are encouraged to use electronic vehicle.

Green Campus

- Tree cover in the campus is adequate.
- Regular planting of trees is found adequate.
- Display boards for medicinal plants in the herbal garden have been placed with required information.

SUGGESTIONS AND RECOMMENDATIONS

Water

- Students can be advised to take back the food waste which would help in reducing the consumption of water for washing.
- The wells can be recharged with rainwater from rooftops of buildings.
- Construction of rainwater harvesting structures for each building can be thought of.
- Awareness programmes for water conservation can be arranged with local NGOs/ Municipal Body. Water quality monitoring should be done periodically.
- Water consumption monitoring system for the entire college should be developed.
- Display boards against the misuse of water need to be developed.

Energy

- It is recommended to avoid using of more energy consuming older electrical appliances and to replace with more environment friendly and energy efficient appliances like five star rating appliances in the college.
- Potential for renewable energy sources have to be explored. The advantage of large roof areas of the college can be taken for installing solar grid.
- It is recommended to use solar powered water heater and cooker in the canteens of college/ hostels and solar powered street lights.
- Regular monitoring of equipment and immediate rectification of any problem should be done.

Green Campus

- In order to increase the carbon credit and greenery of the campus more indigenous and evergreen trees should be planted in the sacs available and spaces created/ likely to be created due to damage and uprooting of old trees.
- Registry of flora and fauna of the college should be developed.
- Display boards for tree with scientific names in the campus need to be developed for identification and learning.
- Possibility of drip watering system for the gardens can be thought of.

Waste

- Use of Plastic should be avoided as far as possible and biodegradable materials should be encouraged as alternatives. The management should try to achieve the goal of plastic free campus.
- Leaf litter from the campus can be effectively used for aerobic/ vermi composting, so that the composted material can also be used as good manure. The composted material can also be used as good manure.
- Paper waste can be recycled instead of incineration or burning. The canteen waste from college/ hostels can be subjected to aerobic composting by Setting-up of few composting yards in the campus. This will provide a chance for the students to learn by seeing and operating such compost yards by them. Also, a good practice of managing their own waste (from lunch box) instead of carrying them back Home they can be trained in operating the compost yard, by using their lunch time waste to produce good organic manure.
- Establishment of a bio-gas plant can be thought of.
- Waste bins should be placed more in number at desired places.
- Green chemistry laboratory practice should be developed.

Carbon Footprint

- Should take initiative for carbon accounting.
- Students should be encouraged to use cycle and electronic two wheeler.
- Efficient cooking system should be established to save cooking gas.

Environment Committee, Pattamundai College
Go green Think green

SIGNATURE OF THE GREEN AUDIT COMMITTEE MEMBERS

DS
10/01/23

1. (Sri Dillip Kumar Bhuyan)
Principal
Principal
Patnamundai College

Sudarsan

2. (Sri Sudarsan Gopinath J adav, IFS)
DFO- Mangrove Forest Division (WL) ,Rajnagar
External Auditor.
Divisional Forest Officer
Mangrove Forest Division (WL)
Rajnagar

3. Mrs. Suchismita Biswal, Lecturer in Botany & Coordinator Green Audit Committee. *Suchismita Biswal*
4. Dr. Sunil Kumar Pradhan, Reader in Chemistry & IQAC-Coordinator. *Sunil Kumar Pradhan*
5. Dr. Fakir Chandra Pradhan, Reader in Chemistry, Green Audit Committee Member *Fakir ch. Pradhan*
6. Dr. Manas Kumar Nayak, IQAC Member &, Green Audit Committee Member *Manas Kumar Nayak*
7. Sri Arabinda Pandab, HOD-Mathematics, Green Audit Committee Member *Arabinda Pandab*
8. Sri Subhasis Mishra, Lecturer in Economics, Green Audit Committee Member *Subhasis Mishra*
9. Sri Sarojakanta Nayak, Lecturer in English, Green Audit Committee Member *Sarojakanta Nayak*
10. Sri Jitendra Malik, Lecturer in Commerce, Green Audit Committee Member *Jitendra Malik*
11. Sri Amit Kumar Sahoo, Lecturer in Physics ,Green Audit Committee Member *Amit Kumar Sahoo*
12. Sri Alok Kumar Sahu, Lecturer in Logic & Philosophy, Green Audit Committee Member *Alok Kumar Sahu*
13. Sri Bijaya Kumar Patra, Forester, Rajnagar, External Auditor *Sri Bijaya K. Patra*
Forester Rajnagar
14. Sri Bisworanjan Tarai ,Forest Guard , Rajnagar, External Auditor *Bisworanjan Tarai*
FG, Rajnagar (South)
Beat

OFFICE OF THE
DIVISIONAL FOREST OFFICER, MANGROVE FOREST DIVISION (WL), RAJNAGAR

AT/P.O: Rajnagar, Dist: Kendrapara-754225, Phone: 06729-242460,
Control Room: 06729-242463, E-mail ID: dfo.rajnagarwl@odisha.gov.in

No. 4721 /04F- 441/2023
Dated, Rajnagar, the 09th August, 2023

To

The Principal,
Pattamundai College, Pattamundai

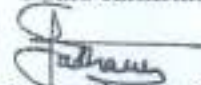
Sub: - Approved the Final Green Audit Report 2021-22 & Issue of Certificate.

Ref: Your office Letter No. 933 dated. 09.08.2023.
Sir,

With reference to the above cited letter on the captioned subject, after verification of the Final Green Audit Report 2021-22 submitted by your College, the undersigned has approve the same & issuing Certificate regarding Green Audit and sent herewith for your information and necessary action

Enclosed: As Above.

Yours faithfully,



Divisional Forest Officer
Mangrove Forest Division (Wildlife)
Rajnagar

**OFFICE OF THE
DIVISIONAL FOREST OFFICER, MANGROVE FOREST DIVISION (WL), RAJNAGAR**

**AT/P.O: Rajnagar, Dist: Kendrapara-754225, Phone: 06729-242460,
Control Room: 06729-242463, E-mail ID: dfo.rajnagarwl@odisha.gov.in**

This is to certify that *Pattamundai College, Pattamundai, Kendrapara-754215, Odisha* has successfully undergone '*Green Campus Audit*' for the session 2021-22 on 8th August, 2023 to assess the Green initiatives planning and efforts carried out in the campus to keep environment friendly atmosphere for the stakeholders was found *satisfactory*



Divisional Forest Officer
Mangrove Forest Division (Wildlife)
Rajnagar

Divisional Forest Officer
Mangrove Forest Division (WL)
Rajnagar