



KSHATRIYA COLLEGE OF ENGINEERING

(Affiliated to JNTU Hyderabad & Approved by AICTE)

**Policy Document on
Environment and Energy Usage
By
KSHATRIYA COLLEGE OF
ENGINEERING**


Principal
Kshatriya College of Engg.
HEPUR-ARMOOR - 503224
Dist. Nizamabad

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NH-63, CHEPUR-ARMOOR, DT: NIZAMABAD – 503224 T.S. India.

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KSHATRIYA COLLEGE OF ENGINEERING

(Affiliated to JNTU Hyderabad & Approved by AICTE)

Kshatriya College of Engineering Policy Document on Environment and Energy Usage:

The Environment and Energy usage Policy of Kshatriya College of Engineering is to manage energy in such a systematic way so as to minimize its impact on the environment. The policy implies to explore the renewable energy resources to reduce the burden of the government and to find out substitute natural resources as solutions to the energy crisis. This environment and energy policy is binding for all the components of the institution and applies to all its stakeholders and to the various activities undertaken by the institution. It will help us to embed efficiency and environmental awareness into our everyday activities, thus helping us to realize our responsibilities and commitment to conservation of natural resources and to limit its usage. The Enviro Club, an official platform devoted to the cause of environmental awareness, to undertake green initiatives, and to conduct green literacy programmes to save energy and to protect the environment.

Policies:

- To assess our energy usage and measure its impact on the environment.
- To count CO₂ emissions generated by our means of transportations- vehicles.
- To reduce local air pollution emissions using environment-friendly vehicles, including bicycles, public transportation and use of pedestrian-friendly roads.
- To install photovoltaic solar panels for the generation of alternate energy.
- To install LED bulbs in the complete campus to save energy.
- To develop systematic waste management mechanism.
- To develop rain water harvesting unit.
- To undertake tree plantation drive.
- To take additional measures to continuously improve our energy consumption.
- To develop and maintain an environmental management system.
- To ensure the availability of necessary resources to achieve our objectives.



KSHATRIYA COLLEGE OF ENGINEERING

(Affiliated to JNTU Hyderabad & Approved by AICTE)

- To encourage use of advanced technology to minimize energy consumption, atmospheric emissions and noise, particularly from our vehicle fleets.
- To engage in dialogue with the government agencies, municipal corporation and the affiliating university and actively work with the local organizations in the areas of environment, energy efficiency and sustainable development.
- To monitor and respond to emerging environmental and energy issues.
- To strengthen our employees' and students' environmental knowledge and skills in order to improve our own environmental performance.
- To provide information and training opportunities on energy saving measures.
- To offer opportunities for employees and students to engage in initiatives those contribute to environmental protection.
- To train our employees and students through our Enviro Club to make them 'Go Green Specialists' and partners to plant trees each year.

This policy will be communicated to the students and employees via internal communication channels, and will be made available to all the stakeholders on the institutional website. The Environment and Energy Policy, objectives and targets will be reviewed on a regular basis by the Enviro Club Convener and its members under the guidance of the Principal of the college.

Principal
Kshatriya College of Engg
CHEPUR-ARMOOR - 503 224
Dist: Nizamabad



KSHATRIYA COLLEGE OF ENGINEERING

(Affiliated to JNTU Hyderabad & Approved by AICTE)

7.1.3: Quality audits on environment and energy regularly undertaken by the Institution Report on energy audit submitted by the auditing agency.

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Principal
Kshatriya College of Engg
CHEPUR-ARMOOR - 503224
Dist. Nizamabad



Kshatriya College of Engineering, Nizamabad, Telangana.

Green Audit (Self-Assessment)

2018-19

Principal
Kshatriya College of Engg.
CHEPUR-ARMOOR - 513 224
Dist: Nizamabad

1. Total number of Plants in Campus?

Plant type with approx. count 1800

Full grown Trees 800

Small Trees 400

Hedge Plants 600

Grass Cover SQM 6856.96 m²

1.1 WATER AND WASTEWATER MANAGEMENT

1. List uses of water in your institute

Basic use of water in campus:

Drinking –1900 liters

Gardening –7500 liters

Kitchen and Toilets – 1400 liters

Others – 1100 liters

Hostel –

Total = 11.9 KL/Month


Principal
Kshatriya College of Engg.
CHEPUR-ANDHRA PRADESH - 516 224
Dist: Nellore

Concept & Context

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. Green Audit is assigned to the Criteria 7 of NAAC, National Assessment and Accreditation Council which is a self-governing organization of India that declares the institutions as Grade A, Grade B or Grade C according to the scores assigned at the time of accreditation. Moreover, it is part of Corporate Social Responsibility of the Higher Educational Institutions to ensure that they contribute towards the reduction of global warming through Carbon Footprint reduction measures.

In view of the NAAC circular regarding Green auditing, the College management decided to conduct an external environment assessment study by a competent external professional auditor. The green audit aims to examine environmental practices within and outside the College campus, which impact directly or indirectly on the atmosphere. Green audit can be defined as systematic identification, quantification, recording, reporting and analysis of components of College/college environment. It was initiated with the intention of reviewing the efforts within the institutions whose exercises can cause risk to the health of inhabitants and the environment.

Through the green audit, a direction as how to improve the structure of environment and inclusion of several factors that can protect the environment can be commenced. This audit focuses on the Green Campus, Waste Management, Water Management, Air Pollution, Energy Management & Carbon Footprint etc. being implemented by the institution. The concepts, structure, objectives, methodology, tools of analysis, objectives of the audit are discussed below.


Principal
Kshatriya College of Education
Chitwan, Nepal
MSI

Executive Summary

Green auditing is an essential step to identify and determine whether the institutions practices are sustainable and ecological. Traditionally, we were upright and efficient users of natural resources. But over the period of time, excessive usage of resources like water, electricity, petrol, etc. have become habitual for everyone especially, in urban and semi-urban areas. It is actually the right time to check if we (our process) are consuming more than required resources? Whether we are using resources sensibly?

Green audit standardizes all such practices and provides an efficient way to use natural resources. In the time of climate change and resource exhaustion it is necessary to re-check the processes and convert it in to green and sustainable. Green audit provides an approach for it. It also increases overall awareness among the folks working in institution towards the eco-friendly environment.

This is the fifth attempt to conduct green audit of this College campus for fulfilment of NAAC criteria. This Audit was mainly focused on greening indicators like consumption of energy in terms of electricity and

Fossil fuel, quality of soil, water usage, vegetation, waste management practices and carbon foot print of the Campus. Initially a questionnaire was shared to know about the existing resources of the campus and

Resource consumption pattern of the students and staffs in the College.

Kahar
Principal
Engg &


Audit Participants

On behalf of college:

1. M. Laxman.
2. A. Kailash.
3. M. Subhash.
4. Dr. C. Dayanand.
5. A. Kiran Kumar.

On behalf of Audit Team:

Mr. Anilkumar G Swami. (Lead Auditor – ISO 14001 & ISO 50001)


Principal
K. J. Somaiya Institute of Engineering & Technology
Chennai

GREEN AUDIT - ANALYSIS

1.1 GENERAL INFORMATION

1. Does any Green Audit conducted earlier?

Conducted.

2. What is the total strength (people count) of the Institute?

Students

Male:497 Female:279 Total:794

Teachers (including guest faculty)

Male:58 Female:23 Total:81

Non-Teaching Staff

Male:20 Female:16 Total:36

Total Strength

Male:575 Female:336 Total:911


Principal
Institute of Engineering
and Technology
GATEWAY TO KNOWLEDGE

3. What is the total number of working days of your campus in a year?

252

4. Where is the campus located?

Adjacent to NH-64, chepur village, Armoor mandal, Nizamabad District, Telangana

5. Which of the following are available in your institute?

Garden area: Available
Playground: Available
Kitchen: Available
Toilets: Available
Garbage Or Waste Store Yard: Available
Laboratory: Available
Canteen: Available
Hostel Facility
Guest House: Available

6. Which of the following are found near your institute?

Municipal dump yard
Garbage heap
Public convenience
Sewer line
Stagnant water
Open drainage
Industry – (Mention the type)
Bus / Railway station: At a distance 2-3 kms from campus
Market / Shopping complex: At a distance 2-6 kms from campus


1.2 WASTE MINIMIZATION AND RECYCLING

1. Does your institute generate any waste? If so, what are they?

Yes
Electronic waste

2. What is the approximate amount of waste generated per day? (in KG approx.)

Biodegradable waste -
Non-biodegradable waste -


Principal
Kshatriya College of Engg
CHEPURI, NIZAMABAD DISTRICT

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

There are total 17000 liters water storage of water and boosting within the College campus.

Sl. No	Storage Type	Capacity	Quantity	Total (in Litres)
1	OVER HEAD TANK	8000	1	8000
2	OVER HEAD TANK	2000	2	4000
3	OVER HEAD TANK			
4	OVER HEAD TANK			
5	UNDER GROUND TANK (Fire tank)	5000	1	5000
6	UNDER GROUND TANK			
7	UNDER GROUND HEAD TANK			
	TOTAL STORAGE CAPACITY	15000		17000

Saving Techniques

- Avoid overflow of water controlled valves are provided in water supply system.
- Close supervision for water supply system.
- Water Conservation awareness for new students
- Sprinklers usage for gardening and grass cover


Principal
Kshatriya College of Engg.
CHEPUR-APRILDOR - 513 224
Dist: Khammam

1.2 CARBON FOOTPRINT - EMISSION & ABSORPTION

1. Electricity used per year - CO₂ emission from Electricity

$$\begin{aligned} & (\text{Electricity used per year in kWh}/1000) \times 0.84 \\ & = 49658 \text{ kWh} / 1000 \times 0.84 \\ & = 41.712 \text{ ton} \end{aligned}$$

2. Diesel used per year CO₂ emission from HDS (Diesel)

$$\begin{aligned} & (\text{Diesel used per year in litres}) \times 2.68 \\ & \times 2.68 \\ & = 2400 \times 2.68 \\ & = 6.432 \text{ ton} \end{aligned}$$

3. Transportation per year (car) CO₂ emission from transportation (Bus and Car)

Car - About 4.6 metric tons CO₂ per year
Bus - About 17 tons CO₂ per year

Total CO₂ emission per year = 69.472

CARBON ABSORPTION BY FLORA IN THE INSTITUTION

There are 800 full grown trees and 400 semi grown trees of different species, on the campus spread over 28.36 acres.

Carbon absorption capacity of one full grown tree 22 kg CO₂ Therefore Carbon absorption capacity of 800 full-grown trees 800 x 22 kg CO₂ = 17.6 tons of CO₂.

The carbon absorption capacity of 1284 semi-grown trees is 50% of that of full-grown trees. Hence the carbon absorption 400 x 6.8 kg of CO₂ = 2.72 tons of CO₂

There are approximately Hedge Plants 600 of various species being raised in the gardens and grown in the areas where no buildings are built Carbon absorption of bush plants varies widely with their species. Certain bushes absorb very high level of CO₂ where as some others absorb very low level of CO₂. In the absence of a detailed scientific study, 200g of CO₂ absorption is taken per bush (in consultation with Environmental Science specialists). Based on this, total carbon absorption of bushes is 600 x 200 g = 0.12 tons of CO₂ The lawns on the campus have grass and cover a total area of 73808 sq. ft. Carbon absorption capacity of a 10 sq. ft. area of lawn is 1 g per day Therefore, carbon absorption by lawn area 73808 x 365 x 0.1 g CO₂ = 2.69 tons CO₂ per year.

Grand total of carbon absorption capacity of the campus is 23.01 tons.

Principal
Kshatriya College of Engg.
CHEPUR-ARMOOR - 503 224
Dist: Eluru

RECOMMENDATIONS

1. Green Belt Development.
2. Deployment of renewable energy sources.
3. Energy savings.



Principal
Kshatriya College of Engg.
CHEPUR-ARMOUR - 733 224
Dist: Bhubaneswar



Kshatriya College of Engineering, Nizamabad, Telangana.

Green Audit Report
2019-20

Principal
Kshatriya College of Eng
CHE UR-APR-2019-20
Dist: Nizamabad

Overview

Kshatriya College of Engineering (KCEA) was established in the year 2001 under the aegis of Pandit Deendayal Upadhyay Educational Society. KCEA is located on a sprawling 40 acres campus. It is located on the serene NH-16 highway, 30 km away from Nizamabad district. KCEA is affiliated to the Jawaharlal Nehru Technology University Hyderabad. (JNTUH) offering graduate programs in engineering and postgraduate programs in the streams of Engineering, Business Administration, and Polytechnic.



Principal
Kshatriya College of Engg
CHEPUR-APNODR - 507122
Dist: Nizamabad

GREEN AUDIT - ANALYSIS

1.1 GENERAL INFORMATION

1. Does any Green Audit conducted earlier?

Not Conducted

2. What is the total strength (people count) of the Institute?

Students

Male: 515 Female: 273 Total: 788

Teachers (including guest faculty)


Male: 60 Female: 24 Total: 84

Non-Teaching Staff

Male: 21 Female: 16 Total: 37

Total Strength

Male: 596 Female: 313 Total: 909


Principal
Kshatriya College of Engg
CHENAI-AP-OR-1-22-
Dist: Andhra Pradesh

3. What is the total number of working days of your campus in a year?

257

4. Where is the campus located?

Adjacent to NH-64, chepur village, Armoor mandal, Nizamabad District, Telangana

5. Which of the following are available in your institute?

Garden area available
Playground available
Kitchen available
Toilets available
Garbage Or Waste Store Yard available
Laboratory available
Canteen available
Hostel Facility
Guest House available

6. Which of the following are found near your institute?

Municipal dump yard
Garbage heap
Public convenience
Sewer line
Stagnant water
Open drainage
Industry – (Mention the type)
Bus / Railway station at a distance 2-3 kms from campus
Market / Shopping complex at a distance 2-6 kms from campus

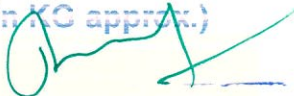
1.2 WASTE MINIMIZATION AND RECYCLING

1. Does your institute generate any waste? If so, what are they?

Yes
Electronic waste

2. What is the approximate amount of waste generated per day? (in KG approx.)

Biodegradable waste -
Non-biodegradable waste -


Principal
Kshatriya College of Engg
CHEMICAL PHARMACY
Nizamabad

Hazardous Waste <

Others -

3. How is the waste managed in the institute? By Composting, Recycling, Reusing, Others (specify)

Others -

Waste Electronic material is sold out to the 3rd party for Recycling / Reusing

4. Do you use recycled paper in institute?

No

5. How would you spread the message of recycling to others in the community?

Our college NCS unit is organizing ofetnly the awareness programs I n near the village Chepur ,Perkit,Govindpet,Mamadipally,Lakkora etc to spread the message or recycling and its importance

6. Can you achieve zero garbage in your institute? if yes, how?

Continuous efforts are put to achieve zero garbage

1.3 GREENING THE CAMPUS

1. Is there a garden in your institute?

Yes

2. Do students spend time in the garden?

Yes

Principal
Kshatriya College of Engg
CHEPUR-APRIL 2014-1320

3. Total number of Plants in Campus?

Plant type with approx. count 1750

Full grown Trees 750

Small Trees 390

Hedge Plants 540

Grass Cover SQM 6870.96 m²

4. Is the College campus having any Horticulture Department? (If yes, give details)

No

5. How many Tree Plantation Drives organized by campus per annum?

A minimum 3 in a year

6. Is there any Plant Distribution Program for Students and Community?

YES

8. Is there any Plant Ownership Program?

NO

1.4 WATER AND WASTEWATER MANAGEMENT

1. List uses of water in your institute

Basic use of water in campus:

Drinking – 1900 liters

Gardening – 7800 liters

Kitchen and Toilets – 1400 liters

Others – 1100 liters

Hostel –

Total = 12.2 KL/Month KLtr (approximately)



Principal
Kshatriya College of Engg
CHEPUR-ARNDOR - 713 224
Dist. Murshidabad

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

There are total 17000 liters water storage of water and boosting within the College campus.

Sl. No	Storage Type	Capacity	Quantity	Total (in Litres)
1	OVER HEAD TANK	8000	1	8000
2	OVER HEAD TANK	2000	2	4000
3	OVER HEAD TANK			
4	OVER HEAD TANK			
5	UNDER GROUND TANK (Fire tank)	5000	1	5000
6	UNDER GROUND TANK			
7	UNDER GROUND HEAD TANK			
	TOTAL STORAGE CAPACITY	15000		17000

Saving Techniques

- Avoid overflow of water controlled valves are provided in water supply system.
- Close supervision for water supply system.
- Water Conservation awareness for new students
- Sprinklers usage for gardening and grass cover

3. Locate the point of entry of water and point of exit of waste water in your institute.

Entry – South-West or Open Area

Exit- North-East or Main Bulding

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
- In new block, push tap are installed to save water


Principal
Kshatriya College of Engg
CHE-TR-AR-DR-3224
Pat

1.5 ANIMAL WELFARE

1. List the animals (wild and domestic) found on the campus (dogs, cats, squirrels, birds, insects, etc.)

Dogs , Squirrels, Birds, Insects , Peacocks

2. Does your institute have a Biodiversity Program or a KARUNA CLUB?

No

1.6 CARBON FOOTPRINT - EMISSION & ABSORPTION

1. Electricity used per year - CO2 emission from Electricity

$(\text{electricity used per year in kWh}/1000) \times 0.84$
 $= 48600\text{kWh} /1000 \times 0.84$
 $= 40.82 \text{ ton}$

2. LPG/PNG used per year - CO2 emission from LPG/PNG

$(\text{LPG/PNG used per year in KG}) \times 2.99$
 $\times 2.99$
 $= \times 2.99$
 $= \text{ton}$

3. Diesel used per year CO2 emission from HDS (Diesel)

$(\text{Diesel used per year in litres}) \times 2.68$
 $\times 2.68$
 $= 2400 \times 2.68$
 $= 6.432 \text{ ton}$

4. Transportation per year (car) CO2 emission from transportation (Bus and Car)

Car - About 4.6 tons r co2 per year
Bus – About 17 tons r co2 per year


Principal
Kshatriya College of Engg
CHFCU CAMPUS - 10/22

Total CO2 emission per year cumulative by electricity usage + bus and car transportation = 68.852 Tons

CARBON ABSORPTION BY FLORA IN THE INSTITUTION

There are 750 full grown trees and 390 semi grown trees of different species, on the campus spread over 28.36 acres.


Carbon absorption capacity of one full grown tree 22 kg CO2 Therefore Carbon absorption capacity of 800 full-grown trees $750 \times 22 \text{ kg CO}_2 = 16.5 \text{ tons of CO}_2$.

The carbon absorption capacity of 390 semi-grown trees is 50% of that of full-grown trees. Hence the carbon absorption $390 \times 6.8 \text{ kg of CO}_2 = 2.652 \text{ tons of CO}_2$

There are approximately Hedge Plants 540 of various species being raised in the gardens and grown in the areas where no buildings are built Carbon absorption of bush plants varies widely with their species. Certain bushes absorb very high level of CO2 where as some others absorb very low level of CO2. In the absence of a detailed scientific study, 200g of CO, absorption is taken per bush (in consultation with Environmental Science specialists). Based on this, total carbon absorption of bushes is $540 \times 200 \text{ g} = 0.108 \text{ tons of CO}_2$

The lawns on the campus have grass and cover a total area of 73760 sq. ft. Carbon absorption capacity of a 10 sq. ft. area of lawn is 1 g per day Therefore, carbon absorption by lawn area $73760 \times 365 \times 0.1 \text{ g CO}_2 = 2.69 \text{ tons CO}_2 \text{ per year}$.

Grand total of carbon absorption capacity of the campus is 21.95 tons.


Principal
Kshatriya College of Engg
CHEPUN-ARMOUR - 213 224
Dist. ...

GREEN INITIATIVES BY CAMPUS

- **Solid Waste Management**
 - Waste management is done by composting
- **Tree Plantation Drives**
 - Five plantation drives were carried out in the current year on the Campus.
- **Air Pollution Reduction**
 - The College is in the process of pursuing air quality monitoring by an approved lab.



Principal
Kshatriya College of Engg
CHERUR-ARUNNOR - 713 224

RECOMMENDATIONS

- College should start drip irrigation to save water on campus
- Increase plantation drives in nearby villages, local bodies, NGOs, and Municipal Corporations.
- Establish an E-waste collection center on campus.



Principal
Kshatriya College of Engg
CHF, BHADRAKUR - 13224

09815012345



KSHATRIYA COLLEGE OF ENGINEERING

NIZAMABAD, TELANGANA.

Has been assessed by BGS for the environmental impacts to fulfil the requirements of

GREEN AUDIT

The initiatives carried out by the institution have been found to be satisfactory.

Auditor Signature

A handwritten signature in black ink, appearing to read 'Anil', with a horizontal line underneath.

Date of Audit: 24.06.2020

BGS Certification Services.
Email: bgscertification@gmail.com.
Thane.

A handwritten signature in green ink, appearing to read 'Anil', with a horizontal line underneath.

Principal
Kshatriya College of Engg
Nizamabad, Telangana

1. Total number of Plants in Campus?

Plant type with approx. count 1800

Full grown Trees 800

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Grass Cover SQM 6856.96 m²

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Principal
Sri Lanka College of Energy
Sri Lanka College of Energy

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Saving Techniques

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- Close supervision for water supply system.
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- Sprinklers usage for gardening and grass cover

Principal
Srihariya College of Engg.
BANGALORE - 560024

1.2 CARBON FOOTPRINT - EMISSION & ABSORPTION

1. Electricity used per year - CO₂ emission from Electricity

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CARBON ABSORPTION BY FLORA IN THE INSTITUTION

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Grand total of carbon absorption capacity of the campus is 23.01 tons.

Kshatriya College of Engi

CHP

11

RECOMMENDATIONS

1. Green Belt Development.
2. Deployment of renewable energy sources.
3. Energy savings.



Principal
Kshatriya College of Engg
CHEPUR-ARMOUR - 713 224
Dist: Jharkhand



Kshatriya College of Engineering, Nizamabad, Telangana.

Green Audit Report
2020-21

A handwritten signature in blue ink, appearing to be 'S. S. S.', written over a faint blue line.

Principal
Kshatriya College of Engineering
Nizamabad, Telangana

Overview

Kshatriya College of Engineering (KCEA) was established in the year 2001 under the aegis of Pandit Deendayal Upadhyay Educational Society. KCEA is located on a sprawling 40 acres campus. It is located on the serene NH-16 highway, 30 km away from Nizamabad district. KCEA is affiliated to the Jawaharlal Nehru Technology University Hyderabad. (JNTUH) offering graduate programs in engineering and postgraduate programs in the streams of Engineering, Business Administration, and Polytechnic.



Principal
Kshatriya College of Engg.
CHEPUR-ARMOOR - 503 224
Dist. Nizamabad

GREEN AUDIT - ANALYSIS

1.1 GENERAL INFORMATION

1. Does any Green Audit conducted earlier?

Not Conducted

2. What is the total strength (people count) of the Institute?

Students

Male: 597 Female: 294 Total: 891

Teachers (including guest faculty)

Male: 62 Female: 28 Total: 90

Non-Teaching Staff

Male: 22 Female: 16 Total: 38

Total Strength

Male: 681 Female: 338 Total: 1019

Kshatriya College of Engg.
CHEFUR-ARUNDOR - 43 224
Dist: Mandla

3. What is the total number of working days of your campus in a year?

257

4. Where is the campus located?

Adjacent to NH-64, Chepur village, Armoor Mandal, Nizamabad District, Telangana

5. Which of the following are available in your institute?

Garden area available
Playground available
Kitchen available
Toilets available
Garbage Or Waste Store Yard available
Laboratory available
Canteen available
Hostel Facility
Guest House available

6. Which of the following are found near your institute?

Municipal dump yard
Garbage heap
Public convenience
Sewer line
Stagnant water
Open drainage
Industry – (Mention the type)
Bus / Railway station at a distance 2-3 kms from campus
Market / Shopping complex at a distance 2-6 kms from campus


1.2 WASTE MINIMIZATION AND RECYCLING

1. Does your institute generate any waste? If so, what are they?

Yes
Electronic waste

2. What is the approximate amount of waste generated per day? (in KG approx.)

Biodegradable waste -
Non-biodegradable waste -


Principal
Kshatriya College of Education
CHEPUR-ARMOOR
Nizamabad

Hazardous Waste <
Others -

3. How is the waste managed in the institute? By Composting, Recycling, Reusing, Others (specify)

Others -
Waste Electronic material is sold out to the 3rd party for Recycling / Reusing

4. Do you use recycled paper in institute?

No

5. How would you spread the message of recycling to others in the community?

Our college NCS unit is organizing ofetnly the awareness programs I n near the village Chepur ,Perkit,Govindpet,Mamadipally,Lakkora etc to spread the message or recycling and its importance

6. Can you achieve zero garbage in your institute? if yes, how?

Continuous efforts are put to achieve zero garbage

1.3 GREENING THE CAMPUS

1. Is there a garden in your institute?

Yes

2. Do students spend time in the garden?

Yes


Principal
Kshatriya College of Engg.
CHEPURI-AMARAVATI
Dist: N.S.

3. Total number of Plants in Campus?

Plant type with approx. count 1790

Full grown Trees 780

Small Trees 350

Hedge Plants 500

Grass Cover SQM 6556.96 m²

4. Is the College campus having any Horticulture Department? (If yes, give details)

No

5. How many Tree Plantation Drives organized by campus per annum?

A minimum 3 in a year

6. Is there any Plant Distribution Program for Students and Community?

YES

8. Is there any Plant Ownership Program?

NO

1.4 WATER AND WASTEWATER MANAGEMENT

1. List uses of water in your institute

Basic use of water in campus:

Drinking – 1900 liters


Gardening – 7900 liters

Kitchen and Toilets – 1400 liters

Others – 1200 liters

Hostel –

Total = 12.4 KL/Month


Principal
Kshatriya College of Engg.
CHEPUR - 507 102, Dist. Nellore - 524 002

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

There are total 17000 liters water storage of water and boosting within the College campus.

Sl. No	Storage Type	Capacity	Quantity	Total (in Litres)
1	OVER HEAD TANK	8000	1	8000
2	OVER HEAD TANK	2000	2	4000
3	OVER HEAD TANK			
4	OVER HEAD TANK			
5	UNDER GROUND TANK (Fire tank)	5000	1	5000
6	UNDER GROUND TANK			
7	UNDER GROUND HEAD TANK			
	TOTAL STORAGE CAPACITY	15000		17000

Saving Techniques

- Avoid overflow of water controlled valves are provided in water supply system.
- Close supervision for water supply system.
- Water Conservation awareness for new students
- Sprinklers usage for gardening and grass cover

3. Locate the point of entry of water and point of exit of waste water in your institute.

Entry – South-West or Open Area

Exit- North-East or Main Bulding

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
- In new block, push tap are installed to save water

Kshatya College
CHEPUR-MAHARASHTRA
Dist: Mumbai

1.5 ANIMAL WELFARE

1. List the animals (wild and domestic) found on the campus (dogs, cats, squirrels, birds, insects, etc.)

Dogs, Squirrels, Birds, Insects, Peacocks

2. Does your institute have a Biodiversity Program or a KARUNA CLUB?

No

1.6 CARBON FOOTPRINT - EMISSION & ABSORPTION

1. Electricity used per year - CO₂ emission from Electricity

(Electricity used per year in kWh/1000) x 0.84
= 49050 kWh /1000x0.84
= 41.202 ton

2. LPG/PNG used per year - CO₂ emission from LPG/PNG


(LPG/PNG used per year in KG) x 2.99
x 2.99
= x 2.99
= ton

3. Diesel used per year CO₂ emission from HDS (Diesel)

(Diesel used per year in litres) x 2.68
x 2.68
= 2400 x 2.68
= 6.432 ton

4. Transportation per year (car) CO₂ emission from transportation (Bus and Car)

Car - About 4.6 metric tons CO₂ per year
Bus - About 17 tons CO₂ per year


Principal
Kshatriya College of Education
CHEPUR-ARUNACHAL PRADESH
Dist: Nima

Total CO2 emission per year cumulative by electricity usage + bus and car transportation= 69.234 ton

CARBON ABSORPTION BY FLORA IN THE INSTITUTION

There are 780 full grown trees and 350 semi grown trees of different species, on the campus spread over 28.36 acres.

Carbon absorption capacity of one full grown tree 22 kg CO2 Therefore Carbon absorption capacity of 800 full-grown trees $780 \times 22 \text{ kg CO}_2 = 17.16 \text{ tons of CO}_2$.

The carbon absorption capacity of 350 semi-grown trees is 50% of that of full-grown trees. Hence the carbon absorption $350 \times 6.8 \text{ kg of CO}_2 = 2.38 \text{ tons of CO}_2$

There are approximately Hedge Plants 500 of various species being raised in the gardens and grown in the areas where no buildings are built Carbon absorption of bush plants varies widely with their species. Certain bushes absorb very high level of CO2 where as some others absorb very low level of CO2. In the absence of a detailed scientific study, 200g of CO, absorption is taken per bush (in consultation with Environmental Science specialists). Based on this, total carbon absorption of bushes is $500 \times 200 \text{ g} = 0.10 \text{ tons of CO}_2$

The lawns on the campus have grass and cover a total area of 70578 sq. ft. Carbon absorption capacity of a 10 sq. ft. area of lawn is 1 g per day Therefore, carbon absorption by lawn area $70578 \times 365 \times 0.1 \text{ g CO}_2 = 2.58 \text{ tons CO}_2 \text{ per year}$.

Grand total of carbon absorption capacity of the campus is 22.22 tons.




Principal
Kshatriya College of Engg.
Chitwan, Nepal - 22100

GREEN INITIATIVES BY CAMPUS

- **Solid Waste Management**
 - There is ban on single use plastic and plastic crockery in the campus.
- **Renewable Energy**
 - Solar power plant of capacity 60 KW is to be installed on building roof.
 - College has signed an agreement with third party solar power provider for 0.06 MW.
 -
- **Tree Plantation Drives**
 - Five plantation drives were carried out in the current year on the Campus.
 - Plants survival rate is around 90%
- **Air Pollution Reduction**
 - Personal Vehicles (Students) are not allowed in the campus

Environment Committee Initiatives – KCEA has an environment committee.


Principal
Kshatriya College of Engineering
CHEPUR-ARMOOR - 503 224
Tel: 0866-2611111

RECOMMENDATIONS

- Environmental parameters should be included in purchase policy to achieve a cradle to grave approach for sustainability.
- College should go for water balancing / audit for monitoring the use and wastage of water.
- A Water Meter should be installed at every building of the institute to monitor water consumption per capita.
- College should start drip irrigation to save water on campus
- College should increase the use of Sprinklers for gardening purposes
- Flow rate of taps should be checked, it should not be more than 2.5 liters/minute.
- Increase plantation drives in nearby villages, local bodies, NGOs, and Municipal Corporations.
- Arrange training programs on environmental management systems and nature conservation for schools and local people.
- Establish an E-waste collection center on campus.

Green building guidelines for future expansion projects of the campus.



Principa.

Kshatriya College of Engg.
CHEPUR-ARMDOOR - 503 224
CHEPUR-ARMDOOR - 503 224
Dist: Nizamabad



AUDIT CERTIFICATE

PRESENTED TO

KSHATRIYA COLLEGE OF ENGINEERING

NIZAMABAD, TELANGANA.

Has been assess by MQCIUL for the comprehensive study of environmental impacts on institutional working framework to fulfil the requirements of

GREEN AUDIT

The green initiatives carried out by the institution have been verified on the report submitted and was found to be satisfactory.

The efforts taken by the management and the faculty towards environment and sustainability are appreciated and noteworthy.

Auditor Signature

Date of Audit: 23.06.2021



Amil

MARK CERTIFICATION CONSULTANTS, 8-1-402/A/5/2, TOLICHOWKI, HYDERABAD -500008, TELANGANA, INDIA.

Website: WWW.MARKCERTIFICATION.COM,

Email: INFO@MARKCERTIFICATION.COM

[Signature]

Principal
Kshatriya College of Engg.
CHEPUR-ARMOOR - 503 224
Dist: Nizamabad



Kshatriya College of Engineering, Nizamabad, Telangana.

Green Audit Report
2021-22

Principal
Kshatriya College of Engineering
Nizamabad, Telangana

Overview

Kshatriya College of Engineering (KCEA) was established in the year 2001 under the aegis of Pandit Deendayal Upadhyay Educational Society. KCEA is located on a sprawling 40 acres campus. It is located on the serene NH-16 highway, 30 km away from Nizamabad district. KCEA is affiliated to the Jawaharlal Nehru Technology University Hyderabad. (JNTUH) offering graduate programs in engineering and postgraduate programs in the streams of Engineering, Business Administration, and Polytechnic.



Principal
Kshatriya College of Engg.
CHF, Nizamabad, DR 52224
Dist: Nizamabad

GREEN AUDIT REPORT – DETAILS

1. Does any Green Audit conducted earlier?

Conducted.

2. What is the total strength (people count) of the institute?

Students

Male: 509 Female: 305 Total: 814

Teachers


Male: 55 Female: 27 Total: 82

Non-Teaching Staff

Male: 21 Female: 18 Total: 36

Total Strength

Male: 585 Female: 350 Total: 935


Principal
Kahatriya College of Engg.
CHEPUR-AR, Dist: Jhabua
Pin: 382225



AUDIT CERTIFICATE

PRESENTED TO

KSHATRIYA COLLEGE OF ENGINEERING

NIZAMABAD, TELANGANA.

Has been assess by MQCIUL for the comprehensive study of environmental impacts on institutional working framework to fulfil the requirements of

GREEN AUDIT

The green initiatives carried out by the institution have been verified on the report submitted and was found to be satisfactory.

The efforts taken by the management and the faculty towards environment and sustainability are appreciated and noteworthy.

Auditor Signature

Date of Audit: 22.06.2022



Amil

MARK CERTIFICATION CONSULTANTS, 8-1-402/A/5/2, TOLICHOWKI, HYDERABAD -500008, TELANGANA, INDIA.

Website: WWW.MARKCERTIFICATION.COM,

Email: INFO@MARKCERTIFICATION.COM

[Signature]
Principal
Kshatriya College of Eng.
CHEE 2/1/2022
Dist: Nizamabad

RECOMMENDATIONS

- Eco-friendly product purchase.
- College should increase the use of Sprinklers for gardening purposes
- Increase plantation drives in nearby villages, local bodies, NGOs, and Municipal Corporations.
- Establish an E-waste collection center on campus.


Green building guidelines for future expansion projects of the campus
Note: Other details will be added later on.


Principal
Kshatriya Engineering College
CHE
2024

GREEN INITIATIVES BY CAMPUS

- **Solid Waste Management**
 - Waste management is done by composting
 - There is ban on single use plastic and plastic crockery in the campus.
- **Renewable Energy**
 - The college is using solar lights for street lights.
- **Tree Plantation Drives**
 - Two plantation drives were carried out in the current year on the Campus.
 - Plants survival rate is around 87%
- **Air Pollution Reduction**
 - Personal Vehicles (Students) are not allowed in the campus

Environment Committee Initiatives – KCEA has an environment committee.


Principal
Kshatriya College of Engg
CHEP, Bangalore - 560 024
Dist. Channarayana

Total CO2 emission per year cumulative by electricity usage + bus and car transportation = 41.076 + 6.432 + 21.6 = 69.108 tons

CARBON ABSORPTION BY FLORA IN THE INSTITUTION

There are 800 full grown trees and 400 semi grown trees of different species, on the campus spread over 28.36 acres.

Carbon absorption capacity of one full grown tree 22 kg CO₂ Therefore Carbon absorption capacity of 800 full-grown trees 800 x 22 kg CO₂ =17.6 tons of CO₂.

The carbon absorption capacity of 400 semi-grown trees is 50% of that of full-grown trees. Hence the carbon absorption 400 x 6.8 kg of CO₂ = 2.72 tons of CO₂

There are approximately Hedge Plants 600 of various species being raised in the gardens and grown in the areas where no buildings are built Carbon absorption of bush plants varies widely with their species. Certain bushes absorb very high level of CO₂ where as some others absorb very low level of CO₂. In the absence of a detailed scientific study, 200g of CO₂ absorption is taken per bush (in consultation with Environmental Science specialists). Based on this, total carbon absorption of bushes is 600 x 200 g = 0.12 tons of CO₂

The lawns on the campus have grass and cover a total area of 73807 sq. ft. Carbon absorption capacity of a 10 sq. ft. area of lawn is 1 g per day Therefore, carbon absorption by lawn area 73807 x 365 x 0.1 g CO₂ = 2.69 tons CO₂ per year.

Grand total of carbon absorption capacity of the campus is 23.13 tons.


Principal
Kshatriya College of Engg
CHE
122

1.5 ANIMAL WELFARE

1. List the animals (wild and domestic) found on the campus (dogs, cats, squirrels, birds, insects, etc.)

Dogs, Squirrels, Birds, Insects, Peacocks

2. Does your institute have a Biodiversity Program or a KARUNA CLUB?

No

1.6 CARBON FOOTPRINT - EMISSION & ABSORPTION

1. Electricity used per year - CO2 emission from Electricity

$(\text{Electricity used per year in kWh}/1000) \times 0.84$
 $= 48900 \text{ kWh}/1000 \times 0.84$
 $= 41.076 \text{ ton}$

2. LPG/PNG used per year - CO2 emission from LPG/PNG

$(\text{LPG/PNG used per year in KG}) \times 2.99$
 $\times 2.99$
 $= \times 2.99$
 $= \text{ton}$

3. Diesel used per year CO2 emission from HDS (Diesel)

$(\text{Diesel used per year in litres}) \times 2.68$
 $\times 2.68$
 $= 2400 \times 2.68$
 $= 6.432 \text{ ton}$

4. Transportation per year (car) CO2 emission from transportation (Bus and Car)

Car – About 4.6 tons r co2 per year
Bus – About 17 tons r co2 per year


Principal
Kshatriya College of Engg
CHERUPA, BILASAR - 761024
Dist: Bhubaneswar

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

There are total 17000 liters water storage of water and boosting within the College

Sl. No	Storage Type	Capacity	Quantity	Total (in Litre)
1	OVER HEAD TANK	8000	1	8000
2	OVER HEAD TANK	2000	2	4000
3	OVER HEAD TANK			
4	OVER HEAD TANK			
5	UNDER GROUND TANK (Fire tank)	5000	1	5000
6	UNDER GROUND TANK			
7	UNDER GROUND HEAD TANK			
	TOTAL STORAGE CAPACITY	15000		17000

Saving Techniques

- Avoid overflow of water controlled valves are provided in water supply system.
- Close supervision for water supply system.
- Water Conservation awareness for new students
- Sprinklers usage for gardening and grass cover

3. Locate the point of entry of water and point of exit of waste water in your institute.


Entry – South-West or Open Area

Exit- North-East or Main Building

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
- In new block, push tap are installed to save water


Principal
Chhatrapati Chhatrapati College of Engineering
Chhatrapati Chhatrapati College of Engineering
Chhatrapati Chhatrapati College of Engineering

3. Total number of Plants in Campus?

Plant type with approx. count 1800
Full grown Trees 800
Small Trees 400
Hedge Plants 600
Grass Cover SQM 6856.96 m²

4. Is the College campus having any Horticulture Department? (if yes, give details)

No

5. How many Tree Plantation Drives organized by campus per annum?

A minimum 3 in a year

6. Is there any Plant Distribution Program for Students and Community?

YES

8. Is there any Plant Ownership Program?

NO

1.4 WATER AND WASTEWATER MANAGEMENT

1. List uses of water in your institute

Basic use of water in campus:

Drinking – 2500 liters


Gardening – 8500 liters

Kitchen and Toilets – 1500 liters

Others – 1200 liters

Hostel –

Total = 13.7KL/Month


Principal
Kshriya College of Engg.
CHE
Dist. ...

Hazardous Waste <
Others -

3. How is the waste managed in the institute? By Composting, Recycling, Reusing, Others (specify)

Waste Electronic material is sold out to the 3rd party for Recycling / Reusing

4. Do you use recycled paper in institute?

No

5. How would you spread the message of recycling to others in the community?

Our college NCS unit is organizing ofetnly the awareness programs I n near the village Chepur ,Perkit,Govindpet,Mamadipally,Lakkora etc to spread the message or recycling and its importance

6. Can you achieve zero garbage in your institute? if yes, how?

Continuous efforts are put to achieve zero garbage


1.3 GREENING THE CAMPUS

1. Is there a garden in your institute?

Yes

2. Do students spend time in the garden?

Yes


Principal
Ksharivastharam Engineering College
Chennai - 600 022
Date: _____

3. What is the total number of working days of your campus in a year?

258

4. Where is the campus located?

Adjacent to NH-64, Chepur village, Armors Mandal, Nizamabad District, Telangana

5. Which of the following are available in your institute?

- Garden area available
- Playground available
- Kitchen available
- Toilets available
- Garbage Or Waste Store Yard available
- Laboratory available
- Canteen available
- Hostel Facility
- Guest House available

6. Which of the following are found near your institute?

- Municipal dump yard
- Garbage heap
- Public convenience
- Sewer line
- Stagnant water
- Open drainage
- Industry – (Mention the type)
- Bus / Railway station at a distance 2-3 kms from campus
- Market / Shopping complex at a distance 2-6 kms from campus


1.2 WASTE MINIMIZATION AND RECYCLING

1. Does your institute generate any waste? If so, what are they?

E- Waste

2. What is the approximate amount of waste generated per day? (in KG approx.)

- Biodegradable waste -
- Non-biodegradable waste -


Principal
Kshatruva College of Engineering
CHEPUR VILLAGE, ARMORS MANDAL,
NIZAMABAD DISTRICT, TELANGANA

Disclaimer

MQCIUL Audit Team has prepared this report for **KCEA** 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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MQCIUL Staff, agents and accreditation bodies have signed individual confidentiality undertakings and will only receive confidential information on a 'need to know' basis.



Principal
Kahatriya
CHB
Dist.

Acknowledgement

We would like to thank the management of KCEA for assigning this important work of Green Audit. We appreciate the co-operation to the teams for completion of assessment.

We would also like to thank Dr. V. Vedprakash – Coordinator, IQAC, for her continuous support and guidance, without which the completion of the project will not be 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 the IQAC team last but not the least, we would like to thank Prof. Dr. R. K. Pandey (*Principal*), KCEA for giving us an opportunity to evaluate the environmental performance of the campus.



Dist: Muzaffarnagar



Kshatriya College of Engineering
Nizamabad, Telangana.

Green Audit Report
2022-23

Principal
Kshatriya College of Engineering
Nizamabad, Telangana
2022-23

Green Audit Report Structure

INTRODUCTION

OVERVIEW OF COLLEGE

VISION AND MISSION

AUDIT PARTICIPANTS

EXECUTIVE SUMMARY

GREEN AUDIT ANALYSIS

1.1 GENERAL INFORMATION OF COLLEGE

1.2 WASTE MINIMIZATION AND RECYCLING

1.3 GREENING THE CAMPUS

1.4 WATER & WASTE WATER MANAGEMENT

1.5 ANIMAL WELFARE

1.6 CARBON FOOTPRINTS

INITIATIVES TAKEN BY COLLEGE

RECOMMENDATION

CONCLUSION



Principal
Kshatrim College of Engg
CHE
2023



AUDIT CERTIFICATE

PRESENTED TO

KSHATRIYA COLLEGE OF ENGINEERING NIZAMABAD, TELANGANA.

Has been assess by MQCIUL for the comprehensive study of environmental impacts on institutional working framework to fulfil the requirements of

GREEN AUDIT

The green initiatives carried out by the institution have been verified on the report submitted and was found to be satisfactory.

The efforts taken by the management and the faculty towards environment and sustainability are appreciated and noteworthy.

Auditor Signature

Date of Audit: 21.06.2023



Amil

MARK CERTIFICATION CONSULTANTS, 8-1-402/A/5/2, TOLICHOWKI, HYDERABAD -500008, TELANGANA, INDIA.

Website: WWW.MARKCERTIFICATION.COM,

Email: INFO@MARKCERTIFICATION.COM

Principal

Principal
Kshatriya College of Engg
CHEPUR-500013, CR-50322
Dist. Nizamabad

Introduction

Now a days, the educational institutions are becoming more thoughtful towards the environmental aspects and as a result new and innovative concepts are being introduced to makethem sustainable and eco-friendly. To preserve the environment within the institution, a numberof viewpoints are applied by the several educational institutes to solve their environmental problems such as promotion of the saving the energy, waste recycle, water consumption reduction, water harvesting and many more...

The activities carried out by the institution can also create adverse environmental impacts. Greenaudit is defined as an official inspection of the effects a College has on the environment. Green Audit is conducted to evaluate the actual scenario at the institution campus. Green audit can be a useful tool for a College/college to determine how and where they are using the most of the energy or water or resources; the College can then decide how to implement changes and make savings. It can also be used to determine the nature and volume of waste, which can be used for a recycling project or to improve waste minimization plan.

Green auditing and the application of mitigation measures is a win-win situation for all the institutions, the learners and the mother earth. It can also result in health awareness and can promote the environmental awareness, values and beliefs. It provides a better understanding to staff and students about the Green impact on institution. Green auditing also upholds financial savings through reduction of resource usage. It gives an opportunity to the students and teachers for the development of ownership of the personal and social responsibility. The audit process involves primary data collection, site walk through with the team of College/college including the assessment of policies, activities, documents and records.



Principal

Shri. A. C. ...

Chitwan ...

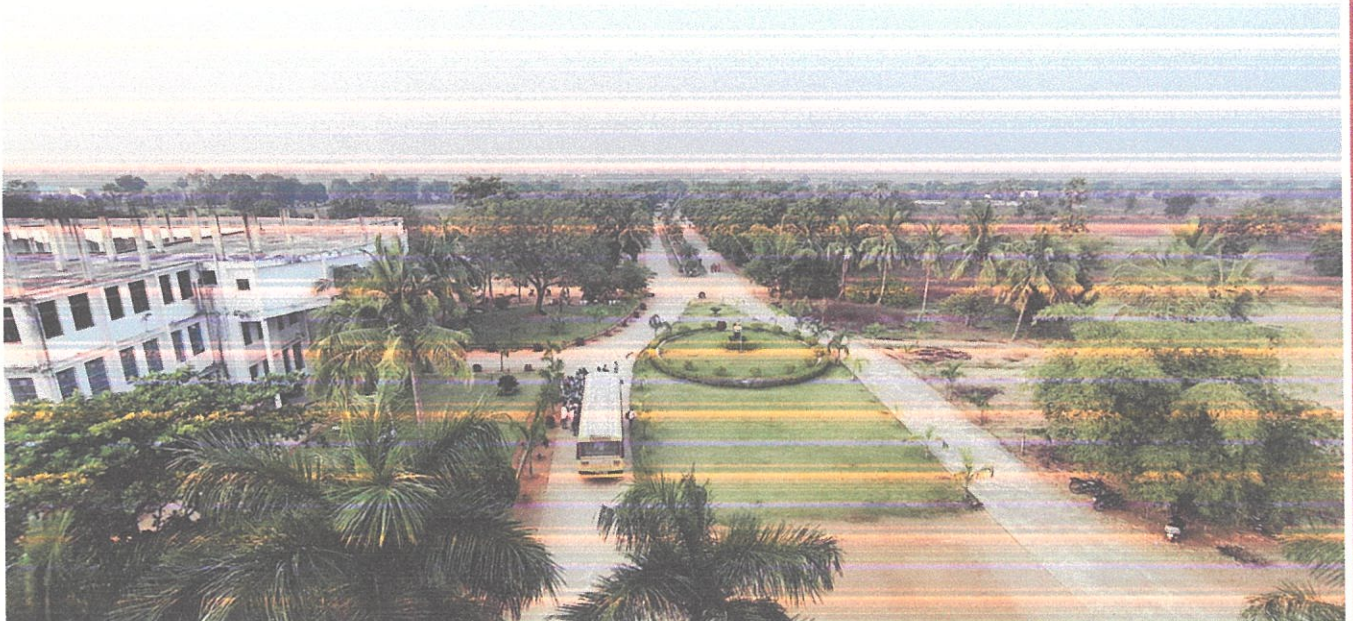
...


Overview of the College

The educated is the one who has learned how to learn ...and change. "It is only through Right Education one can bring a desired and positive change in this society. Goyal Group of Industries envisaged the need of right education and so as an extension to the philosophy of, "SERVICE TO CUSTOMERS".

KCEA today is the name to reckon with for its Student Centric interventions to meet the objective of imparting Quality Engineering and Management Education aiming for the sole motto of making the leaders in chosen disciplines, ready to take on the challenges of world of work effectively and efficiently. The courseware addresses the educational and emotional needs of the students which in turn help them to advocate the cause of "Responsible Citizenship" not only at workplace but in all walks of life in the dynamic world order.

Kshatriya College of Engineering (KCEA) was established in the year 2001 under the aegis of Pandit Deendayal Upadhyay Educational Society. KCEA is located on a sprawling 40 acres campus. It is located on the serene NH-16 highway, 30 km away from Nizamabad district. KCEA is affiliated to the Jawaharlal Nehru Technology University Hyderabad. (JNTUH) offering graduate programs in engineering and postgraduate programs in the streams of Engineering, Business Administration, and Polytechnic.




Principal
Kshatriya College of Engineering
CHE
Nizamabad

- **Tree Plantation Drives**
 - Five plantation drives were carried out in the current year in the Campus.
 - Plants survival rate is around 85%
- **Air Pollution Reduction**
 - Personal Vehicles (Students) are not allowed in the campus
 - College is in process to pursue air quality monitoring by NABL approved lab.


Environment Committee Initiatives – KCEA has an environment committee.

RECOMMENDATIONS

- Environmental parameters should be included in purchase policy to achieve a cradle to grave approach for sustainability.
- College should go for water balancing / audit for monitoring the use and wastage of water.
- Water Meter should be installed at every building of institute for monitoring of water consumption per capita.
- College should start drip irrigation to save water in campus
- College should increase the use of Sprinklers gardening purpose
- Flow rate of taps should be checked, it should not be more than 2.5 litres/minute.
- Increase plantation drives in nearby villages, local bodies, NGO and Municipal Corporation.
- Arrange training programmes on environmental management system and nature conservation for schools and local people.
- Establish an E-waste collection center in campus.

Green building guidelines for future expansion projects of the campus

Note: Other details will be added later on.


Principal
Kshatriya College of Engg.
CHEPUR-ARANGOR - 753 224
Dist: Bhubaneswar

Hazardous Waste <

Others -

3. How is the waste managed in the institute? By Composting, Recycling, Reusing, Others (specify)

Others -

Waste Electronic material is sold out to the 3rd party for Recycling / Reusing

4. Do you use recycled paper in institute?

No

5. How would you spread the message of recycling to others in the community?

Our college NCS unit is organizing often the awareness programs in near the village Chepur, Perkit, Govindpet, Mamadipally, Lakkora etc to spread the message of recycling and its importance

6. Can you achieve zero garbage in your institute? if yes, how?

Continuous efforts are put to achieve zero garbage


1.3 GREENING THE CAMPUS

1. Is there a garden in your institute?

Yes

2. Do students spend time in the garden?

Yes


Principal
Kshatriya College of Engg.
CHEPUR-ARUNACHAL PRADESH - 781 224
Dist: Kamrup

3. Total number of Plants in Campus?

Plant type with approx. count 1800

Full grown Trees 800

Small Trees 400

Hedge Plants 600

Grass Cover SQM 6856.96 m²

4. Is the College campus having any Horticulture Department? (If yes, give details)

No

5. How many Tree Plantation Drives organized by campus per annum?

A minimum 3 in a year

6. Is there any Plant Distribution Program for Students and Community?

YES

8. Is there any Plant Ownership Program?

NO

1.4 WATER AND WASTEWATER MANAGEMENT

1. List uses of water in your institute

Basic use of water in campus:

Drinking – 2000 liters


Gardening – 8000 liters

Kitchen and Toilets – 1400 liters

Others – 1000 liters

Hostel –

Total = 12.4KL/Month (approximately)


Principal
Kshatriya College of Engg
CHETPUR-ANANDPUR - 201 220
Dist. Gurgaon

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

There are total 17000 liters water storage of water and boosting within the College campus.

Sl. No	Storage Type	Capacity	Quantity	Total (in Litres)
1	OVER HEAD TANK	8000	1	8000
2	OVER HEAD TANK	2000	2	4000
3	OVER HEAD TANK			
4	OVER HEAD TANK			
5	UNDER GROUND TANK (Fire tank)	5000	1	5000
6	UNDER GROUND TANK			
7	UNDER GROUND HEAD TANK			
	TOTAL STORAGE CAPACITY	15000		17000

Saving Techniques

- Avoid overflow of water controlled valves are provided in water supply system.
- Close supervision for water supply system.
- Water Conservation awareness for new students
- Sprinklers usage for gardening and grass cover

3. Locate the point of entry of water and point of exit of waste water in your institute.

Entry – South-West or Open Area

Exit- North-East or Main Bulding

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
- In new block, push tap are installed to save water

Principal
Kshatriya College of Engg.
CHEPUR-APRIL 2021
Dist: Khammam

1.5 ANIMAL WELFARE

1. List the animals (wild and domestic) found on the campus (dogs, cats, squirrels, birds, insects, etc.)

Dogs , Squirrels, Birds, Insects , Peacocks

2. Does your institute have a Biodiversity Program or a KARUNA CLUB?

No

1.6 CARBON FOOTPRINT - EMISSION & ABSORPTION

1. Electricity used per year - CO₂ emission from Electricity

$(\text{electricity used per year in kWh}/1000) \times 0.84$
 $= 48,768 \text{ kWh} /1000 \times 0.84$
 $= 40.97 \text{ ton}$

2. LPG/PNG used per year - CO₂ emission from LPG/PNG

$(\text{LPG/PNG used per year in KG}) \times 2.99$
 $\times 2.99$
 $= \times 2.99$
 $= \text{ton}$

3. Diesel used per year CO₂ emission from HDS (Diesel)

$(\text{Diesel used per year in litres}) \times 2.68$
 2400×2.68
 $= 6.432 \text{ ton}$

4. Transportation per year (car) CO₂ emission from transportation (Bus and Car)

Car - About 4.6 Tons r co₂ per year
Bus - About 17 ons r co₂ per year



Principal

Kshatriya College of Engg
CHEERJEEVA
GATEWAY TO KNOWLEDGE

Total CO₂ emission per year cumulative by electricity usage + diesel + bus and car transportation = (69 ton)

CARBON ABSORPTION BY FLORA IN THE INSTITUTION

There are 800 full grown trees and 400 semi grown trees of different species, on the campus spread over 28.36 acres.

Carbon absorption capacity of one full grown tree 22 kg CO₂ Therefore Carbon absorption capacity of 800 full-grown trees $800 \times 22 \text{ kg CO}_2 = 17.6 \text{ tons of CO}_2$.

The carbon absorption capacity of 400 semi-grown trees is 50% of that of full-grown trees. Hence the carbon absorption $400 \times 6.8 \text{ kg of CO}_2 = 2.72 \text{ tons of CO}_2$

There are approximately Hedge Plants 600 of various species being raised in the gardens and grown in the areas where no buildings are built Carbon absorption of bush plants varies widely with their species. Certain bushes absorb very high level of CO₂ where as some others absorb very low level of CO₂. In the absence of a detailed scientific study, 200g of CO₂ absorption is taken per bush (in consultation with Environmental Science specialists). Based on this, total carbon absorption of bushes is $600 \times 200 \text{ g} = 0.12 \text{ tons of CO}_2$

The lawns on the campus have grass and cover a total area of 73797 sq. ft. Carbon absorption capacity of a 10 sq. ft. area of lawn is 1 g per day Therefore, carbon absorption by lawn area $73797 \times 365 \times 0.1 \text{ g CO}_2 = 2.69 \text{ tons CO}_2 \text{ per year}$.

Grand total of carbon absorption capacity of the campus is 23.13 tons.



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Kshatriya College of Education
CHEERAMPUR,
Dist. Kollam

GREEN INITIATIVES BY CAMPUS

➤ **Solid Waste Management**

- Waste management is done by composting.
- Recycling of used paper is carried out in paper recycling plant.
- There is ban on single use plastic and plastic crockery in the campus.

➤ **Renewable Energy**

- Solar power plant of capacity 60 KW is to be installed on building roof.
- College has signed an agreement with third party solar power provider for 0.06 MW.
- The college is using solar lights for street lights.



Principal
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CHEERUPATI - 22
Dist. -

➤ **Tree Plantation Drives**

- Five plantation drives were carried out in the current year in the Campus.
- Plants survival rate is around 85%

➤ **Air Pollution Reduction**

- Personal Vehicles (Students) are not allowed in the campus
- College is in process to pursue air quality monitoring by NABL approved lab.

Environment Committee Initiatives – KCEA has an environment committee.

RECOMMENDATIONS

- Environmental parameters should be included in purchase policy to achieve a cradle to grave approach for sustainability.
- College should go for water balancing / audit for monitoring the use and wastage of water.
- Water Meter should be installed at every building of institute for monitoring of water consumption per capita.
- College should start drip irrigation to save water in campus
- College should increase the use of Sprinklers gardening purpose
- Flow rate of taps should be checked, it should not be more than 2.5 liters/minute.
- Increase plantation drives in nearby villages, local bodies, NGO and Municipal Corporation.
- Arrange training programmes on environmental management system and nature conservation for schools and local people.
- Establish an E-waste collection center in campus.

Green building guidelines for future expansion projects of the campus

Note: Other details will be added later on.



Principal
Kshatriya Group of Engg
CHE
10/11/2023



Kshatriya College of Engineering
Nizamabad, Telangana.

Green Audit Report
2023-24

A handwritten signature in green ink, appearing to be 'A. J.' or similar.

Principal
Kshatriya College of Engg.
CHEPUR-ARMOOR - 503 224
Dist: Nizamabad

Green Audit Report Structure

INTRODUCTION

OVERVIEW OF COLLEGE

VISION AND MISSION

AUDIT PARTICIPANTS

EXECUTIVE SUMMARY

GREEN AUDIT ANALYSIS

1.1 GENERAL INFORMATION OF COLLEGE

1.2 WASTE MINIMIZATION AND RECYCLING

1.3 GREENING THE CAMPUS

1.4 WATER & WASTE WATER MANAGEMENT

1.5 ANIMAL WELFARE

1.6 CARBON FOOTPRINTS

INITIATIVES TAKEN BY COLLEGE

RECOMMENDATION

CONCLUSION


Principal
Kshatriya College of Engg.
CHEPUR-ARMOUR - 503 224
Dist: Khammam

Acknowledgement

We would like to thank the management of KCEA for assigning this important work of Green Audit. We appreciate the co-operation to the teams for completion of assessment.

We would also like to thank Dr. V. Vedprakash – Coordinator, IQAC, for her continuous support and guidance, without which the completion of the project will not be 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 the IQAC team last but not the least, we would like to thank Prof. Dr. R. K. Pandey (*Principal*), KCEA for giving us an opportunity to evaluate the environmental performance of the campus.



Disclaimer

MQCIUL Audit Team has prepared this report for KCEA 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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Concept & Context

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. Green Audit is assigned to the Criteria 7 of NAAC, National Assessment and Accreditation Council which is a self-governing organization of India that declares the institutions as Grade A, Grade B or Grade C according to the scores assigned at the time of accreditation. Moreover, it is part of Corporate Social Responsibility of the Higher Educational Institutions to ensure that they contribute towards the reduction of global warming through Carbon Footprint reduction measures.

In view of the NAAC circular regarding Green auditing, the College management decided to conduct an external environment assessment study by a competent external professional auditor. The green audit aims to examine environmental practices within and outside the College campus, which impact directly or indirectly on the atmosphere. Green audit can be defined as systematic identification, quantification, recording, reporting and analysis of components of College/college environment. It was initiated with the intention of reviewing the efforts within the institutions whose exercises can cause risk to the health of inhabitants and the environment.

Through the green audit, a direction as how to improve the structure of environment and inclusion of several factors that can protect the environment can be commenced. This audit focuses on the Green Campus, Waste Management, Water Management, Air Pollution, Energy Management & Carbon Footprint etc. being implemented by the institution. The concepts, structure, objectives, methodology, tools of analysis, objectives of the audit are discussed below.


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CHERUR-APRIL 2011-12 1224
Date: _____

Introduction

Now a days, the educational institutions are becoming more thoughtful towards the environmental aspects and as a result new and innovative concepts are being introduced to makethem sustainable and eco-friendly. To preserve the environment within the institution, a numberof viewpoints are applied by the several educational institutes to solve their environmental problems such as promotion of the saving the energy, waste recycle, water consumption reduction, water harvesting and many more...

The activities carried out by the institution can also create adverse environmental impacts. Greenaudit is defined as an official inspection of the effects a College has on the environment. Green Audit is conducted to evaluate the actual scenario at the institution campus. Green audit can be a useful tool for a College/college to determine how and where they are using the most of the energy or water or resources; the College can then decide how to implement changes and make savings. It can also be used to determine the nature and volume of waste, which can be used for a recycling project or to improve waste minimization plan.

Green auditing and the application of mitigation measures is a win-win situation for all the institutions, the learners and the mother earth. It can also result in health awareness and can promote the environmental awareness, values and beliefs. It provides a better understanding to staff and students about the Green impact on institution. Green auditing also upholds financial savings through reduction of resource usage. It gives an opportunity to the students and teachers for the development of ownership of the personal and social responsibility. The audit process involves primary data collection, site walk through with the team of College/college including the assessment of policies, activities, documents and records.



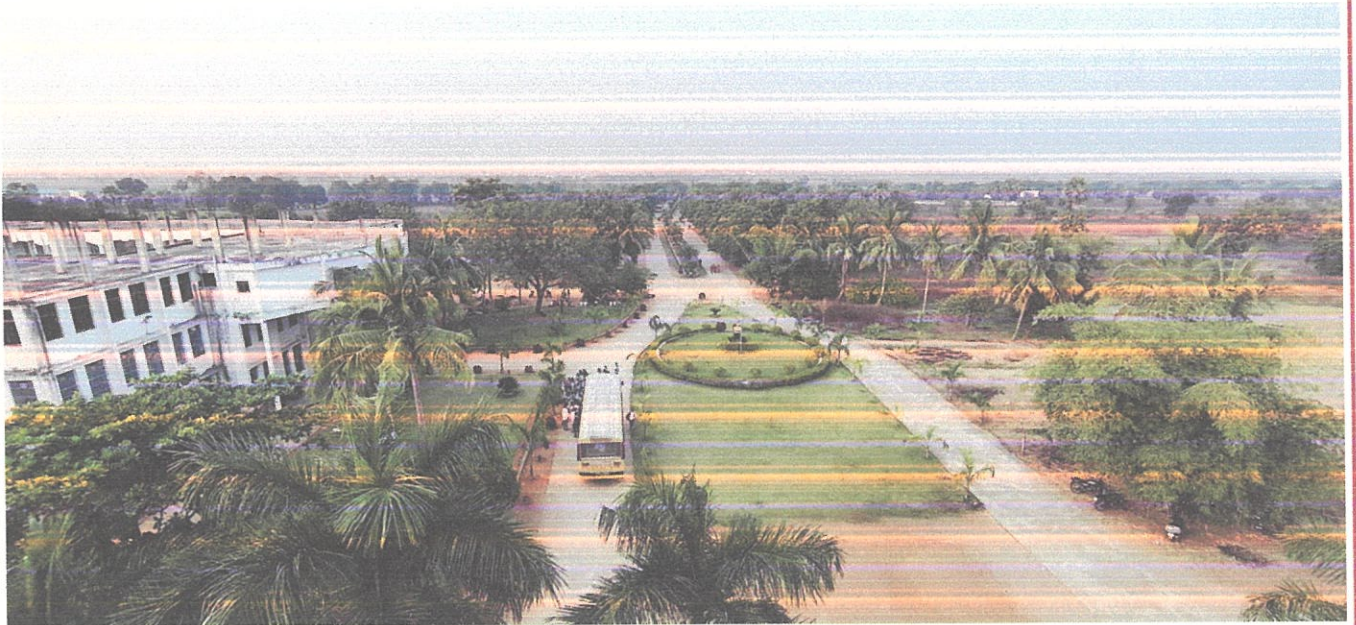
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Kshatriya College of Engg.
CHEPUR-ARIKUR - 753 224
Dist: Bargarh

Overview of the College

The educated is the one who has learned how to learn ...and change. "It is only through Right Education one can bring a desired and positive change in this society. Goyal Group of Industries envisaged the need of right education and so as an extension to the philosophy of, "SERVICE TO CUSTOMERS".

KCEA today is the name to reckon with for its Student Centric interventions to meet the objective of imparting Quality Engineering and Management Education aiming for the sole motto of making the leaders in chosen disciplines, ready to take on the challenges of world of work effectively and efficiently. The courseware addresses the educational and emotional needs of the students which in turn help them to advocate the cause of "Responsible Citizenship" not only at workplace but in all walks of life in the dynamic world order.

Kshatriya College of Engineering (KCEA) was established in the year 2001 under the aegis of Pandit Deendayal Upadhyay Educational Society. KCEA is located on a sprawling 40 acres campus. It is located on the serene NH-16 highway, 30 km away from Nizamabad district. KCEA is affiliated to the Jawaharlal Nehru Technology University Hyderabad. (JNTUH) offering graduate programs in engineering and postgraduate programs in the streams of Engineering, Business Administration, and Polytechnic.




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Dist: Nizamabad

Vision & Mission



Our Vision:

To be a center of excellence in technical education with research orientation and to develop human resources to serve the society and nation building.



Our Mission:

- To provide comprehensive technical education programmes in various disciplines and to contribute effectively to the profession and the society.
- Establishing centre of excellence in inter disciplinary areas which are important and relevant to industry and employment with scope for research.
- To inculcate human values and ethical practices to the graduates through co- curricular and extracurricular activities.


Principal
Kshatriya College of Engg.
CHEPUR-ARIJOUR - 533 224
Dist: Eluru

Audit Participants

On behalf of college:

1. M. Laxman.
2. A. Kailash.
3. M. Subhash.
4. Dr. C. Dayanand.
5. A. Kiran Kumar.

On behalf of Audit Team:

Mr. Anilkumar G Swami. (Lead Auditor – ISO 14001 & ISO 50001)


Principal
Kshatriya College of Engg.
CHEPUR-ARIKODUR - 703 224
Dist: Tirunelveli

Executive Summary


Green auditing is an essential step to identify and determine whether the institutions practices are sustainable and ecological. Traditionally, we were upright and efficient users of natural resources. But over the period of time, excessive usage of resources like water, electricity, petrol, etc. have become habitual for everyone especially, in urban and semi-urban areas. It is actually the right time to check if we (our process) are consuming more than required resources? Whether we are using resources sensibly?

Green audit standardizes all such practices and provides an efficient way to use natural resources. In the time of climate change and resource exhaustion it is necessary to re-check the processes and convert it in to green and sustainable. Green audit provides an approach for it. It also increases overall awareness among the folks working in institution towards the eco-friendly environment.

This is the fifth attempt to conduct green audit of this College campus for fulfilment of NAAC criteria. This Audit was mainly focused on greening indicators like consumption of energy in terms of electricity and

Fossil fuel, quality of soil, water usage, vegetation, waste management practices and carbon foot print of the Campus. Initially a questionnaire was shared to know about the existing resources of the campus and

Resource consumption pattern of the students and staffs in the College.


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Kshatriya College of Engg.
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Dist: Kamrup

GREEN AUDIT - ANALYSIS

1.1 GENERAL INFORMATION

1. Does any Green Audit conducted earlier?

Conducted.

2. What is the total strength (people count) of the Institute?

Students

Male:497 Female:279 Total:794

Teachers (including guest faculty)

Male:58 Female:23 Total:81

Non-Teaching Staff

Male:20 Female:16 Total:36

Total Strength

Male:575 Female:336 Total:911

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3. What is the total number of working days of your campus in a year?

252

4. Where is the campus located?

Adjacent to NH-64, chepur village, Armoor mandal, Nizamabad District, Telangana

5. Which of the following are available in your institute?

Garden area: Available
Playground: Available
Kitchen: Available
Toilets: Available
Garbage Or Waste Store Yard: Available
Laboratory: Available
Canteen: Available
Hostel Facility
Guest House: Available

6. Which of the following are found near your institute?

Municipal dump yard
Garbage heap
Public convenience
Sewer line
Stagnant water
Open drainage
Industry – (Mention the type)
Bus / Railway station: At a distance 2-3 kms from campus
Market / Shopping complex: At a distance 2-6 kms from campus

1.2 WASTE MINIMIZATION AND RECYCLING

1. Does your institute generate any waste? If so, what are they?

Yes
Electronic waste

2. What is the approximate amount of waste generated per day? (in KG approx.)

Biodegradable waste -
Non-biodegradable waste -


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Dist: Nizamabad

Hazardous Waste <

Others -

3. How is the waste managed in the institute? By Composting, Recycling, Reusing, Others (specify)

Others -

Waste Electronic material is sold out to the 3rd party for Recycling / Reusing

4. Do you use recycled paper in institute?

No

5. How would you spread the message of recycling to others in the community?

Our college NCS unit is organizing often the awareness programs in near the village Chepur, Perkit, Govindpet, Mamadipally, Lakkora etc to spread the message of recycling and its importance

6. Can you achieve zero garbage in your institute? If yes, how?

Continuous efforts are put to achieve zero garbage


1.3 GREENING THE CAMPUS

1. Is there a garden in your institute?

Yes

2. Do students spend time in the garden?

Yes


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3. Total number of Plants in Campus?

Plant type with approx. count 1800

Full grown Trees 800

Small Trees 400

Hedge Plants 600

Grass Cover SQM 6856.96 m²

4. Is the College campus having any Horticulture Department? (If yes, give details)

No

5. How many Tree Plantation Drives organized by campus per annum?

A minimum 3 in a year

6. Is there any Plant Distribution Program for Students and Community?

YES

8. Is there any Plant Ownership Program?

NO

1.4 WATER AND WASTEWATER MANAGEMENT

1. List uses of water in your institute

Basic use of water in campus:

Drinking – 2000 liters


Gardening – 8000 liters

Kitchen and Toilets – 1400 liters

Others – 1000 liters

Hostel –

Total = 12.4KL/Month (approximately)


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Dist: Nellore

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

There are total 17000 liters water storage of water and boosting within the College campus.

Sl. No	Storage Type	Capacity	Quantity	Total (in Litres)
1	OVER HEAD TANK	8000	1	8000
2	OVER HEAD TANK	2000	2	4000
3	OVER HEAD TANK			
4	OVER HEAD TANK			
5	UNDER GROUND TANK (Fire tank)	5000	1	5000
6	UNDER GROUND TANK			
7	UNDER GROUND HEAD TANK			
	TOTAL STORAGE CAPACITY	15000		17000

Saving Techniques

- Avoid overflow of water controlled valves are provided in water supply system.
- Close supervision for water supply system.
- Water Conservation awareness for new students
- Sprinklers usage for gardening and grass cover

3. Locate the point of entry of water and point of exit of waste water in your institute.

Entry – South-West or Open Area

Exit- North-East or Main Bulding

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
- In new block, push tap are installed to save water

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Kannur College of Engg.
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Dist: Nizamabad

1.5 ANIMAL WELFARE

1. List the animals (wild and domestic) found on the campus (dogs, cats, squirrels, birds, insects, etc.)

Dogs , Squirrels, Birds, Insects , Peacocks

2. Does your institute have a Biodiversity Program or a KARUNA CLUB?

No

1.6 CARBON FOOTPRINT - EMISSION & ABSORPTION

1. Electricity used per year - CO₂ emission from Electricity

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Dist: Malda

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CARBON ABSORPTION BY FLORA IN THE INSTITUTION

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Grand total of carbon absorption capacity of the campus is 23.13 tons.


Principal
Kshatriya College of Engg.
CHEPUR-ARI, OCR - 533 224
Dist: Anantapur

GREEN INITIATIVES BY CAMPUS

➤ Solid Waste Management

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- There is ban on single use plastic and plastic crockery in the campus.

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- College has signed an agreement with third party solar power provider for 0.06 MW.
- The college is using solar lights for street lights.



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Dist: Buxar



KSHATRIYA COLLEGE OF ENGINEERING


(Affiliated to JNTU Hyderabad & Approved by AICTE)

7.1.3: The Institution regularly undertakes Quality audits on the environment and energy.

Certification by the Audit Agency

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PRINCIPAL
Kshatriya College of Engg
CHEPUR-ARMOOR - 503 224
Dist: Nizamabad.



KSHATRIYA COLLEGE OF ENGINEERING

NIZAMABAD, TELANGANA.

Has been assessed by BGS for the environmental impacts to fulfil the requirements of

GREEN AUDIT

The initiatives carried out by the institution have been found to be satisfactory.

Auditor Signature

A handwritten signature in black ink, appearing to read 'Anil', written over a horizontal line.

Date of Audit: 24.06.2020

BGS Certification Services.
Email: bgscertification@gmail.com.
Thane.

A handwritten signature in green ink, appearing to be a stylized 'A' or similar character, written over a rectangular stamp.

Principal
Kshatriya College of Engg.
CHEPUR-ARJUNNOR - 503 224
Dist: Nizamabad



AUDIT CERTIFICATE

PRESENTED TO

KSHATRIYA COLLEGE OF ENGINEERING NIZAMABAD, TELANGANA.

Has been assess by MQCIUL for the comprehensive study of environmental impacts on institutional working framework to fulfil the requirements of

GREEN AUDIT

The green initiatives carried out by the institution have been verified on the report submitted and was found to be satisfactory.

The efforts taken by the management and the faculty towards environment and sustainability are appreciated and noteworthy.

Auditor Signature

Date of Audit: 23.06.2021



Amil

MARK CERTIFICATION CONSULTANTS, 8-1-402/A/5/2, TOLICHOWKI, HYDERABAD -500008, TELANGANA, INDIA.

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Email: INFO@MARKCERTIFICATION.COM

[Signature]

Principal
Kshatriya College of Engg.
CHEPUR-ARMGUR - 503 224
Dist: Nizamabad



AUDIT CERTIFICATE

PRESENTED TO

KSHATRIYA COLLEGE OF ENGINEERING NIZAMABAD, TELANGANA.

Has been assess by MQCIUL for the comprehensive study of environmental impacts on institutional working framework to fulfil the requirements of

GREEN AUDIT

The green initiatives carried out by the institution have been verified on the report submitted and was found to be satisfactory.

The efforts taken by the management and the faculty towards environment and sustainability are appreciated and noteworthy.

Auditor Signature

Date of Audit: 22.06.2022



Amil

MARK CERTIFICATION CONSULTANTS, 8-1-402/A/5/2, TOLICHOWKI, HYDERABAD -500008, TELANGANA, INDIA.

Website: WWW.MARKCERTIFICATION.COM,

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[Handwritten Signature]

Principal
Kshatriya College of Engg.
CHEPUR-ARMOOR - 503 224
Dist: Nizamabad



AUDIT CERTIFICATE

PRESENTED TO

KSHATRIYA COLLEGE OF ENGINEERING NIZAMABAD, TELANGANA.

Has been assess by MQCIUL for the comprehensive study of environmental impacts on institutional working framework to fulfil the requirements of

GREEN AUDIT

The green initiatives carried out by the institution have been verified on the report submitted and was found to be satisfactory.

The efforts taken by the management and the faculty towards environment and sustainability are appreciated and noteworthy.

Auditor Signature

Date of Audit: 21.06.2023



Amil

MARK CERTIFICATION CONSULTANTS, 8-1-402/A/5/2, TOLICHOWKI, HYDERABAD -500008, TELANGANA, INDIA.

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Principal
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