

PROVIDENCE WOMEN'S COLLEGE KOZHIKKODE

2021



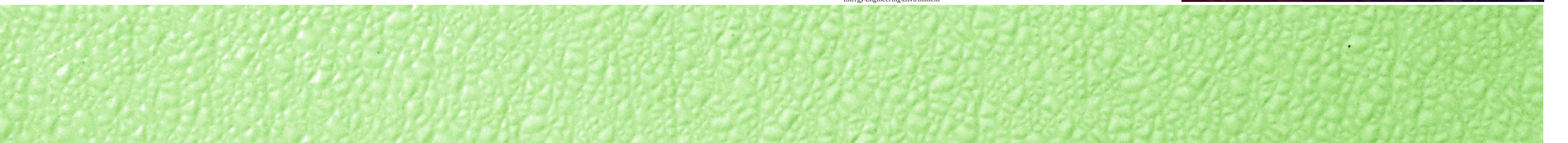
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OTTOTRACTIONS
Energy-Engineering-Environment



ENVIRONMENT AUDIT REPORT

PROVIDENCE WOMEN'S COLLEGE

CALICUT

September 2021



2021/09/22 15:28



Environment Audit Report
PROVIDENCE WOMEN'S COLLEGE
REPORT No: EA 806
2021- September

Environment Audit Team

Ottotractions

| | | |
|---|----------------------|-----------------------------------|
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About OTTOTRACTIONS

OTTOTRACTIONS established in 2005, is an organization with proven track record and knowledge in the field of energy, engineering, and environmental services. They are the first Accredited Energy Auditor from Kerala for conducting Mandatory Energy Audits in Designated Consumers as per Energy Conservation Act-2001. Government of Kerala recognized and appreciated **OTTOTRACTIONS** by presenting its prestigious **“The Kerala State Energy Conservation Award 2009”** for the best performance as an Energy Auditor.

Acknowledgment

We were privileged to work together with the administration and staff of Providence Women's College, Calicut for their timely help extended to complete the audit and bringing out this report.

With gratitude, we acknowledge the diligent effort and commitments of all those who have helped to bring out this report.

We also take this opportunity to thank the bona-fide efforts of team OTTOTRACTIONS for unstinted support in carrying out this audit.

We thank our consultants, engineers and backup staff for their dedication to bring this report.

Thank you.

B V Suresh Babu
Accredited Energy Auditor
AEA 33, Bureau of Energy Efficiency

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Certification

This is to certify that

The data collection has been carried out diligently and truthfully;

All data monitoring devices are in good working condition and have been calibrated or certified by approved agencies authorised and no tampering of such devices has occurred;

All reasonable professional skill, care and diligence had been taken in preparing the audit report and the contents thereof are a true representation of the facts;

Adequate training provided to personnel involved in daily operations after implementation of recommendations; and

The environmental audit for the year 2020-21 has been carried out in accordance with the various rules and regulations in India.

This Certificate is issued to Providence Women's College, Kozhikkode on their request.

Dated this 12th day of September 2021.



SURESH BABU B V

ACCREDITED ENERGY AUDITOR (AEA 33)
BUREAU OF ENERGY EFFICIENCY, GOVT OF INDIA





INTRODUCTION

Ottotractions was asked by the Providence Women's College, Calicut to carry out an environmental audit of their campus building.

Each section contains recommendations for improvements relating to environmental issues, which are consolidated in the action plan in section 4.



BACKGROUND

Providence Women's College, Calicut, is one of the largest higher education centers for women in the state of Kerala. It was established in 1952 by the sisters of Apostolic Carmel, as a noble initiative to spread the message of empowerment through education among the women folk in the Malabar region. After the initial years of functioning in the premises of Providence High School, Calicut, the college shifted to its own building atop the picturesque

Florican Hill. Providence College is the result of the collective effort of a committed group headed by our founder Principal, Mother Gabrielle.

It was affiliated to the Madras University in 1952 and later on it became part of Kerala University in 1958 and finally it was brought under the University of Calicut in 1968. The college provides instruction in 6 post graduate courses and 13 under graduate courses. 6 UGC approved Add On Courses, 7 Certificate Courses and 4 Diploma Courses are offered by the college along with the main stream of academic instruction. Along with the A grade awarded by NAAC, the college has also been granted the status of CPE – College with Potential for Excellence by the UGC. The academic exercises of the college are well supported by the non curricular initiatives. The qualified teachers, the vibrant students, the enlightened

leadership and the provision for manifestation of talents of the students constitute the fabric of Providence Women’s College. Quality of life coupled with the cultivation of healthy life attitudes has been the main agenda of the management



| Occupancy Details | | | |
|--------------------------------|---------|---------|---------|
| Particulars | 2018-19 | 2019-20 | 2020-21 |
| Total Students | 1793 | 1778 | 1848 |
| Staffs | 84 | 83 | 85 |
| Total Occupancy of the college | 1877 | 1861 | 1933 |

Total student strength of the campus is 1933. For calculating per capita carbon emission estimation, the student strength is taken into account.



ENVIRONMENTAL ISSUES

This section is broken down into the following different areas: waste, water, energy, resource and materials use and procurement. A final 'other' section is also included for any additional issues.

1.1. Waste

The way communities generate and manage their waste plays an absolutely key role in their ability to use resources efficiently. All buildings contain bins for both general waste and mixed recyclables

(plastic bottles, card, cans and paper). On average each floor in the buildings areas has its own general waste bin and one recycling bin. When the bins are emptied by the cleaning staff. Bins are marked and kept in different colors for identification, however in some locations throughout the building it was unclear which bins were for which waste streams.

There are four basic ways in which campus can do plastic recycling collection services for plastic bottles and containers – curbside, drop-off, buy-back or deposit/refund programs. The first, and most widely accessible, collection method is curbside collection of recyclables. The campus is installed bins to collect plastic bottles and single use plastics. SGC has given a proper awareness on plastic waste problems and they are discouraging the students or teachers to carry plastics to the campus. The ECO club is very active in the campus and do a variety of programs to build awareness on waste management. The reports on different activities of the club is attached as technical supplement of this report.

The major concern of waste management will be focused on the solid waste produced by the campus. Solid wastes produced in the campus are mainly of three types, food waste, paper waste, and plastic waste. Food wastes produced in the campus are mainly by two means. The vegetable wastes produced in the kitchen during the food preparation. The food waste produced by the students and staffs of the campus after the consumption of meals.

| Degradable Waste Generation | | | |
|------------------------------------|---------|---------|---------|
| PROVIDENCE WOMEN'S COLLEGE | | | |
| | 2018-19 | 2019-20 | 2020-21 |
| Total Occupancy | 1877 | 1861 | 1933 |
| Waste generated in kg /day | 37.54 | 46.525 | 15.464 |
| Waste generated in kg /Yr | 4955.28 | 6141.3 | 2041.25 |

Burning plastics shall be strictly restricted inside the campus. Burning plastic and other wastes releases dangerous substances such as heavy metals, Persistent Organic Pollutants, and other toxics into the air and ash waste residues. ... Such pollutants contribute to the development of asthma, cancer, endocrine disruption, and the global burden of disease.

Solid non degradable Waste Generation

| PROVIDENCE WOMEN'S COLLEGE | | | |
|---|---------|---------|---------|
| | 2018-19 | 2019-20 | 2020-21 |
| Total Occupancy | 1877 | 1861 | 1933 |
| Waste paper generated in kg /day | 0.38 | 0.41 | 0.19 |
| Waste plastic generated in kg /day | 0.56 | 0.62 | 0.29 |
| Waste paper generated in kg /Yr | 82.59 | 90.98 | 42.53 |
| Waste plastic generated in kg /Yr | 123.88 | 136.47 | 63.79 |

WASTE MINIMIZATION AND RECYCLING

| | | |
|---|---|--|
| 1 | Does your institute generate any waste? If so, what are they? | Yes, Solid waste Canteen waste, paper, plastic, Horticulture Waste etc |
| 2 | What is the approximate amount of waste generated per day? (in Kilograms/month) (approx.) | Bio Non- Hazardous others Degradable Biodegradable |
| 3 | How is the waste generated in the institute managed? By | Reuse of one side printed Paper for internal communication. Sewage water is discharged to public Sewer. Kitchen waste is used to generate manures. Two types of Waste bins are provided at campus for biodegradable and non-biodegradable waste. |
| | 1 Composting | In-house |
| | 2 Recycling | In-house |
| | 3 Reusing | In-house |
| | 4 Others (specify) | |
| 4 | Do you use recycled paper in institute? | Yes |
| 5 | Do you use reused paper in institute? | Yes |
| 6 | How would you spread the message of recycling to others in the community? Have you taken any initiatives? If yes, please specify. | Number of awareness programs through ECO Club |
| 7 | Can you achieve zero garbage in your institute? If yes, how? | Not yet achieved. Possible through waste management plan. |

Green Cover Audit

| | | | | |
|---|---------------------------------------|-----------------------|-----------------------------------|--|
| 1 | Is there a garden in your institute? | Yes | | |
| 2 | Do students spend time in the garden? | Yes | | |
| 3 | Total number of Plants in Campus | | Plant type Trees Ornamental | Approx. number 428 Not estimated |
| 4 | Number of Tree Plantation Drives | Yes, Through ECO club | | |
| 5 | Number of Trees Planted in Last FY. | NA | | |
| | Survival Rate | | | 80% |

All the activities including energy consumption and waste management have their equivalent carbon emission and they positively contribute to the carbon footprint of the campus. Carbon sequestration is the reverse process, at which the emitted carbon dioxide will get sequestered according to the type of carbon sequestration employed. Even though there are many natural sequestration processes are involved in a campus, the major type of sequestration among them is the carbon sequestration by trees.

Trees sequester carbon dioxide through the biochemical process of photosynthesis and it is stored as carbon in their trunk, branches, leaves and roots. The amount of carbon sequestered by a tree can be calculated by different methods. In this study, the volumetric approach was taken into account, thus the details including CBH (Circumference at Breast Height), height, average age, and total number of the trees, are required. Details of the trees in the campus compound are given in the Table. Detailed table is included in the technical supplement.

| Carbon Sequestration | | | |
|--|---------|---------|---------|
| Particulars | 2018-19 | 2019-20 | 2020-21 |
| Total number of trees | 400 | 420 | 428 |
| Carbon sequestered by trees in the campus (tCO _{2e}) | 2.49 | 2.65 | 3.32 |

Carbon sequestered by a tree can be found out by using different methods. Since this study is employed the volumetric approach, the calculation consists of five processes.

- Determining the total weight of the tree
- Determining the dry weight of the tree
- Determining the weight of carbon in the tree

- Determining the weight of CO₂ sequestrated in the tree
- Determining the weight of CO₂ sequestrated in the tree per year

Carbon sequestrated by each species of trees in the campus compound is given in the Table. Detailed calculation results are listed out in the tables provided in the technical supplements of 'Carbon sequestration'.



| List of trees in the campus | | | | |
|-----------------------------|----------------------------|------------------|----------------|-----------------|
| Sl. No | Botanical name | Common name | Family | Number of trees |
| 1 | Anacardium occidentale | Parangi mavu | Anacardiaceae | 10 |
| 2 | Mangifera indica | Mavu | " | 25 |
| 3 | Spoudias pinnata | Ambazham | " | 1 |
| 4 | Cananga odorata | Swarna chembakam | Annonaceae | 1 |
| 5 | Polyalthia longifolia | Aranamaram | " | 15 |
| 6 | Alstonia macrophylla | Devils tree | Apocynaceae | 2 |
| 7 | Alstonia scholaris | Yakshippala | " | 1 |
| 8 | Areca catechu | Kavungu | Arecaceae | 10 |
| 9 | Caryota urens | Anappana | " | 1 |
| 10 | Cocos nucifera | Thengu | " | 300 |
| 11 | Chrysalidocarpus lutescens | Palm | " | 1 |
| 12 | Tecoma stans | Manja arali | Bignoniaceae | 2 |
| 13 | Spathodea campanulate | | " | 3 |
| 14 | Oroxylon indicum | Palaka payyani | " | 1 |
| 15 | Casuarina equisetifolia | Kattadi | Casuarinaceae | 4 |
| 16 | Terminalia catappa | | Combretaceae | 4 |
| 17 | Muntingia calabura | Panchara pazham | Elaeocarpaceae | 3 |

| | | | | |
|----|-----------------------------|----------------|----------------------------|----|
| 18 | Bridelia retusa | | Euphorbiaceae | 2 |
| 19 | Mallotus tetracoccus | | " | 2 |
| 20 | Phyllanthus acidus | | " | 1 |
| 21 | Phyllanthus emblica | | " | 2 |
| 22 | Macaranga indica | Vatta/Uppoothi | " | 10 |
| 23 | Abrus pricatorium | Kunnikkuru | Fabaceae- Papilionaceae | 2 |
| 24 | Gliricidia sepum | Seema Konna | " | 25 |
| 25 | Pongamia pinnata | | " | 2 |
| 26 | Adenantha pavonina | Manjadi | " | 2 |
| 27 | Dalbergia sisso | Irool | " | 1 |
| 28 | Butea monosperma | Plasu | " | 1 |
| 29 | Bauhinia purpurea | Mandaram | Caesalpiaceae | 5 |
| 30 | Delonix regia | Gulmohar | " | 1 |
| 31 | Saraca asoka | Asokam | " | 2 |
| 32 | Cassia fistula | Kanikonna | " | 3 |
| 33 | Cassia siamea | | " | 5 |
| 34 | Tamarindus indica | Valan puli | " | 10 |
| 35 | Peltophorum pterocarpum | Copper pod | " | 10 |
| 36 | Acacia caesia | Inja | Mimosaceae | 1 |
| 37 | Acacia auriculiformis | | " | 2 |
| 38 | Samania saman | Rain tree | " | 5 |
| 39 | Cinnamomum camphora | | Lauraceae | 1 |
| 40 | Cinnamomum zeylanicum | Karuvapatta | " | 4 |
| 41 | Strychnos nux-vomica | Kanjiram | Loganiaceae | 4 |
| 42 | Magnolia nilgirica | Chambakam | Magnoliaceae | 1 |
| 43 | Azadirachta indica | Aryaveppu | Meliaceae | 5 |
| 44 | Cipadessa baccifera | | " | 1 |
| 45 | Artocarpus heterophyllus | Plavu | Moraceae | 50 |
| 46 | Artocarpus incisus | Breadfruit" | " | 2 |
| 47 | Ficus auriculata | Athi | " | 1 |
| 48 | Ficus benghalensis | Peral | " | 1 |
| 49 | Ficus religiosa | Arayal | " | 1 |
| 50 | Ficus racemosa | Athi | " | 2 |
| 51 | Myristica fragrans | Jathi | Myristicaceae | 15 |
| 52 | Eucalyptus globulus | Eucalyptus | Myrtaceae | 1 |
| 53 | Eugenia caryophyllata | Clove | " | 1 |
| 54 | Syzygium cumini | Njaval | " | 2 |
| 55 | Dendrocalamus strictus | | Poaceae | 20 |
| 56 | Caralia brachiate | | Rhizophoraceae | 2 |

| | | | | |
|----|------------------------|----------------|---------------|----|
| 57 | Aegle marmelos | Koovalam | Rutaceae | 1 |
| 58 | Morinda citrifolia | Noni | Rubiaceae | 1 |
| 59 | Anthocephalus kadamba | Kadambu | " | 1 |
| 60 | Santalum album | Chandanam | Santalaceae | 10 |
| 61 | Chrysophyllum cainito | Swarnapathri | Sapotaceae | 2 |
| 62 | Achras zapota | Sapota | " | 4 |
| 63 | Mimusops elenji | elanji | " | 4 |
| 64 | Pouteria campechiana | Egg fruit | " | 1 |
| 65 | Ailanthus excelsa | Matti | Simaroubaceae | 4 |
| 66 | Simarouba glauca | Lakshmitharu | " | 2 |
| 67 | Kleinhovia hospita | | Sterculiaceae | 1 |
| 68 | Trema orientalis | amapotti | Ulmaceae | 2 |
| 69 | Citharexylum spinosum | Parijatham | Verbanaceae | 1 |
| 70 | Gmelina arborea | Kumizhu | " | 1 |
| 71 | Tectona grandis | Thekku | " | 20 |
| 72 | Mesua ferra | Nagamaram | Clusiaceae | 1 |
| 73 | Bombax malabaricum | Elavu | Bombacaceae | 2 |
| 74 | Lagerstroemia indica | Manimaruth | Lytharaceae | 10 |
| 75 | Auracaria heterophulla | Christmas tree | Auracariaceae | 3 |
| 76 | Cycas circinalis | | Cycadaceae | 2 |
| 77 | Cycas revoluta | | " | 3 |

3.1.1 ENERGY

a. Electricity

The total emission of the carbon dioxide per student is 26.09kg per year (2019-20). Emission reduction plans were prepared to bring the existing per capita carbon footprint to zero or below so as to bring the campus a carbon neutral or carbon negative campus. This can be achieved in many ways but, every alternate plan must be in such a way that, it must fulfill the actual purpose of each activity that is considered.

Here, three major methods are taken in to account as the plans for reducing the carbon emission of the campus.

- Resource optimization
- Energy efficiency
- Renewable energy

- Electricity Consumption

| Base Line Energy Data | | | | |
|----------------------------|------------------------------------|---------|---------|---------|
| PROVIDENCE WOMEN'S COLLEGE | | | | |
| | | 2018-19 | 2019-20 | 2020-21 |
| 1 | Electricity KSEB (kWh) | 102126 | 103932 | 39885 |
| 2 | Electricity Solar - Off grid (kWh) | 47268 | 47268 | 47268 |
| 3 | Electricity (KSEB + Off grid) kWh | 149393 | 151200 | 87152 |
| 4 | Electricity Grid Tied (kWh) | 0.00 | 0.00 | 0.00 |
| 5 | Diesel (L) | 145.36 | 59.93 | 0.00 |
| 6 | LPG (kg) | 1546 | 1494 | 530 |
| 7 | Biogas(Kg) | 20700 | 14490 | 18630 |

| Occupancy Details | | | |
|--------------------------------|---------|---------|---------|
| Particulars | 2018-19 | 2019-20 | 2020-21 |
| Total Students | 1793 | 1778 | 1848 |
| Staffs | 84 | 83 | 85 |
| Total Occupancy of the college | 1877 | 1861 | 1933 |

| PROVIDENCE WOMEN'S COLLEGE | | | | | | | | | | | | |
|----------------------------|-------|-----|-----|----------|----------|-----|----|----|-----------|-----|-----|-----|
| LOCATION | LIGHT | | | | | FAN | | IT | | AC | | |
| | T8 | T12 | CFL | LED TUBE | LED BULB | CF | EF | PC | Projector | 1.5 | 2tr | 3tr |
| Hall | 4 | | | | | 5 | | | 1 | | | |
| Classroom 1-5 | 5 | | | | | 10 | | | | | | |
| Computer room | 1 | | | | | 2 | | 5 | | | | |
| Staffroom | 1 | | | | | 2 | | | | | | |
| Principal room | 1 | | | | | 2 | | | | | | |
| Auditorium | 10 | | | | | 32 | | | | | | |
| Science Block | | | | | | | | | | | | |
| Physics section | 6 | 3 | | | 1 | 8 | | | | | | |
| Chemistry section | | | | | | | | | | | | |
| Staffroom | | 1 | | | | 3 | | | | | | |
| Chemistry lab | | 5 | | 2 | | 9 | 4 | | | | | |
| Classroom 1-2 | | | | 2 | | 2 | | | | | | |
| Class 1 | | 1 | | | | 1 | | | | | | |
| Class 2 | 1 | | | | | 1 | | | | | | |
| Hostel *137 | 137 | | | | | 137 | | | | | | |
| canteen | | | | | | 3 | | | | | | |
| Library Block | | 39 | | | | 48 | | | | | | |

| | | | | | | | | | | | | |
|-------------------|------------|------------|----------|-----------|-----------|------------|----------|------------|----------|----------|----------|----------|
| Office Block | 5 | 4 | | 2 | | 6 | | 1 | | | | |
| Conference room | | 8 | | 1 | | 3 | | | | | | |
| Audio visual room | 3 | | 8 | 4 | | 4 | | | | | | |
| Network admin | 1 | | | | | 1 | | | | | | |
| Principal room | 3 | 1 | | 2 | | 3 | | | | | | |
| Classroom 1-8 | 8 | | | | | 16 | | | | | | |
| Computer lab | | | | | | 10 | | 101 | | 1 | | 1 |
| Class 1-5 | | 10 | | | | 10 | | | | | | |
| Assembly block | | 43 | | | | 21 | | 4 | | | | |
| PG Block *3 | | | | | 12 | 42 | | | 3 | 5 | | |
| Total | 186 | 115 | 8 | 13 | 13 | 381 | 4 | 111 | 4 | 6 | 0 | 1 |

During the energy audit filed studies, 115 Numbers T12, 186 T-8 lamps were identified, which is considered as inefficient. 8 CFLs and 13 LED tubes were found during the audit. The detailed energy efficiency projects are given in the respective chapters of this report.

RESOURCE OPTIMISATION

The effective use of resources can limit its unnecessary wastage. Optimal usage of the resources (such as fuels) can save the fuel and can also reduce the carbon emission due to its consumption. This technique can be effectively implemented in the 'transportation' and 'waste' sectors of the campus.

WASTE MINIMISATION

Optimal utilization of paper and plastic stationaries can reduce the frequency of purchase of items. This can reduce the unnecessary wastage of money as well as the excess production of waste. In the case of food, proper food habits and housekeeping practices can optimize its usage.

Currently, they taking an appreciable effort to reduce the unnecessary production of wastes. But the campus still has opportunities to reduce the generation of waste and can improve much more. Resource optimization can be effectively implemented in all type of waste generated in the campus and the campus can expect about 50% reduction the total waste produced.

ENERGY EFFICIENCY

Energy efficiency is the practice of reducing the energy requirements while achieving the required energy output. Energy efficiency can be effectively implemented in all the sectors of the campus.

FUELS FOR COOKING

The campus can install a solar water heater to rise the water temperature to a much higher level, then it has to consume only very less amount of thermal energy for preparing the same amount of food. This can make a positive benefit to the campus by saving money, energy and can reduce the carbon emission of the campus due to thermal energy consumed for cooking.

TRANSPORTATION

Energy efficiency of the transportation sector is mainly depended on the fuel efficiency of the vehicles used. Here mileage of the vehicle (kmpl - Kilometres per Litre) is calculated to assess the fuel efficiency of the vehicle. Percentage of closeness is the ratio of actual mileage of the vehicle to its expected mileage. If the percentage of closeness of mileages of each vehicle is greater than that of its average, then the efficiency status of the vehicle is considered as 'Above average' and else, it is considered as 'Below average'

Renewable Energy

After analyzing the historical and measured data the following projects are proposed to make the campus carbon neutral. The projects are from energy efficiency and renewable energy. The further additions in the green cover increase will also give positive impact in the carbon mitigation.

| Executive Summary | | | | | |
|--|---|------------|-------------|--------|--------------|
| Consolidated Cost Benefit Analysis of Energy Efficiency Improvement Projects | | | | | |
| PROVIDENCE WOMEN'S COLLEGE | | | | | |
| SI No | Projects | Investment | Cost saving | SPB | Energy saved |
| | | (Lakhs Rs) | (Rs)/Yr | Months | kWh/Yr |
| 1 | Energy Saving in Lighting by replacing existing 186 No's T8 Lamps to 20W LED Tube | 0.56 | 0.24 | 28.13 | 2976 |
| 2 | Energy Saving in Lighting by replacing existing 115 No's T12 (55W) Lamps to 18 W LED Tube | 0.35 | 0.34 | 12.21 | 4238 |
| 3 | Energy Saving in Lighting by replacing existing 8 No's CFL(15W) Lamps to 9W LED BULB | 0.01 | 0.005 | 30.36 | 67 |
| 4 | Energy Saving by replacing existing 381 No's in-efficient ceiling fans with Energy Efficient Five star fans | 8.29 | 0.93 | 107.32 | 11582 |
| | Total | 9.20 | 1.51 | 44.50 | 18863.35 |
| (The saving are projected as per the assumed operation time observed based in the discussions with the plant officials. The data of saving percentages are taken from BEE guide books and field measurements.) | | | | | |
| Consolidated Cost Benefit Analysis of Renewable Energy Projects | | | | | |
| 5 | Installation of 40 kWp Solar Power Plant | 30.00 | 4.09 | 88.06 | 51100 |

Water Conservation Activities

List four uses of water in your institute

Basic use of water in campus:

1. Drinking – Ground Water
2. Gardening – Rain water
3. Kitchen and Toilets –
4. Others –

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

Overhead Water Tanks and Sumps installed for storage of water.

Water conservation are in place

If there is water wastage, specify why and how can the wastage be prevented / stopped? No

Record water use from the institute water meter for six months (record at the same time of each day). At the end of the period, compile a table to show how many litres of water have been used. No logbooks are available

Does your institute harvest rain water? Yes

Is there any water recycling system? Yes

Solar Power plant



General Environmental Awareness Questioner

- Are you aware of any environmental Laws pertaining to different aspects of environmental management? Yes
- Does your institute have any rules to protect the environment? List possible rules you could include. Yes
- Dose Environmental Ambient Air Quality Monitoring conducted by the Institute? Yes
- Dose Environmental Water and Wastewater Quality monitoring conducted by the Institute? Yes
- Dose stack monitoring of DG sets conducted by the Institute? Yes
- Is any warning notice, letter issued by state government bodies? No

| | |
|---|-----|
| Dose any Hazardous waste generated by the Institute? If yes explain its category and disposal method | No |
| Are you aware of any environmental Laws pertaining to different aspects of environmental management? | Yes |
| Does your institute have any rules to protect the environment? List possible rules you could include. | Yes |
| Does housekeeping schedule in your campus? | Yes |
| Are students and faculties aware of environmental cleanliness ways? If Yes Explain | Yes |
| Dose Important Days Like World Environment Day, Earth Day, and Ozone Day etc. eminent in Campus? | Yes |
| Dose Institute participated in National and Local Environmental Protection Movement? | Yes |
| Dose Institute has any Recognition/certification for environment friendliness? | Yes |
| Dose Institute using renewable energy? | Yes |
| Dose Institution conducts a green/environmental audit of its campus? | Yes |
| Has the institution been audited / accredited by any other agency such as NABL, NABET, TQPM, NAAC etc.? | Yes |

| Best Practices and Initiatives | |
|---|------------|
| Renewable Energy | Yes |
| Solar Power Plant | |
| Energy Audit and Green Audit Conducted | |
| Biogas Plant installed | |
| Biodiversity Conservation | Yes |
| Green Cover | |
| Tree Plantation Drives | Yes |
| ECO clubs | |
| Ground Water Recharge | Yes |
| Rain Water Harvesting System. | |
| Pollution Reduction Public Transportation | Yes |
| E Waste Management | Yes |
| Connected to authorized recycler | |
| Solid Waste Management | Yes |
| Lifting of garbage from campus on alternate day by Municipal Corporation. | |
| Adoption of Village | Yes |
| CSR | |
| Water Conservation | Yes |
| Energy Conservation | Yes |



RECOMMENDATIONS

1. Implement a utility monitoring program.
 - Allocate staff to carry out meter readings for electricity, waste and water on regular basis
 - Add monitoring data to spreadsheet so results can be viewed graphically
 - Compare with the utility bills meter readings in order to ensure accuracy;

2. Consider adopting and implementing a sustainable procurement policy which takes into account the whole life cycle of a product, and make sure environmental issues are written into tenders when contracting out.
3. Consider trialing recycled paper again – many recycled brands today, such as Evolve, are just as good as virgin paper.
4. Trial the use of re-manufactured (i.e. refilled) ink and toner cartridges rather than purchasing new ones.
5. Consider producing some designated 'environmental' pages on the intranet to make it easier for staff to find environmental information. If possible a discussion forum could be set up to allow easy internal communications and staff to make suggestions for environmental improvements.
6. Environmental training could be formalized and carried out for all staff. It does not have to be too long or onerous, providing it covers key points, particularly in relation to waste so all staff are aware of the legal requirements. At the very least, environmental information should be included in the induction pack.
7. It is strongly recommended that environmental information is also given to students and staff during induction. It is particularly important for them to be aware of what waste they can dispose on site and where they can dispose of it, and what waste streams they must take away with them.
8. Consider implementing an environmental management system to incorporate all improvements and monitoring requirements. It does not need to be a complex system certified to any particular standard, merely a way of ensuring that baselines are set and progress is measured. Formation of Environment Policy and communicated to all faculties and other staff.
9. Plan for Zero Waste Campus Project
10. E-waste monthly inventory be maintained at campus as per E waste rules 2016.
11. Water Meter should be installed at institute for monitoring of water consumption per capita.
12. Increase in Environmental promotional activities for spreading awareness at campus.
13. Environment/Green committee formation for regulating eco-friendly initiatives at campus premises and periphery.



CONCLUSION

This audit involved extensive consultation with all the campus team, interactions with key personnel on wide range of issues related to Environmental aspects. The audit has identified several observations for making the campus premise more environmental friendly. The recommendations are also mentioned with observations for the team to initiate actions.

However, there is scope for further improvement, particularly in relation to waste minimization and energy monitoring. By implementing a basic environmental management

system, current good practice can be formalized and a framework can be set up for monitoring, implementation of action plans and continual improvement.

The audit team observed that the overall site is maintained well from environmental perspective. There is no major observations but few things are important to initiate urgently are waste management records by monthly inventory of hazardous waste, rainwater harvesting recharge; water balance cycle and periodic inspection of buildings; environment policy and initiation of composting at campus.

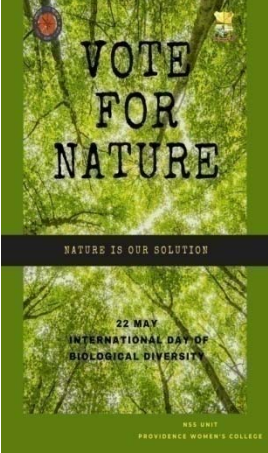
References




- The Environment [Protection] Act – 1986 (Amended 1991) & Rules-1986 (Amended 2010)
- The Petroleum Act: 1934 – The Petroleum Rules: 2002
- The Central Motor Vehicle Act: 1988 (Amended 2011) and The Central Motor Vehicle Rules:1989 (Amended in 2005)
- Energy Conservation Act 2010.
- The Water [Prevention & Control Of Pollution] Act – 1974 (Amended 1988) & the Water (Prevention & Control of Pollution) Rules – 1975
- The Water [Prevention & Control Of Pollution] Cess Act-1977 (Amended 2003) and Rules- 1978
- The Air [Prevention & Control Of Pollution] Act – 1981 (Amended 1987) The Air (Prevention & Control of Pollution) Rules – 1982
- The Gas Cylinders Rules – 2016 (Replaces the Gas Cylinder Rules – 1981
- E-waste management rules 2016
- Electrical Act 2003 (Amended 2001) / Rules 1956 (Amended 2006)
- The Hazardous Waste (Management and Handling and Trans-boundary Movement) Rules, 2008 (Amended 2016)
- The Noise Pollution Regulation & Control rules, 2000 (Amended 2010)
- The Batteries (Management and Handling) rules, 2001 (Amended 2010)
- http://providencecollegicalicut.com/departments_details/?id=NQ%3D%3D
- http://providencecollegicalicut.com/departments_details/?id=MTM%3D


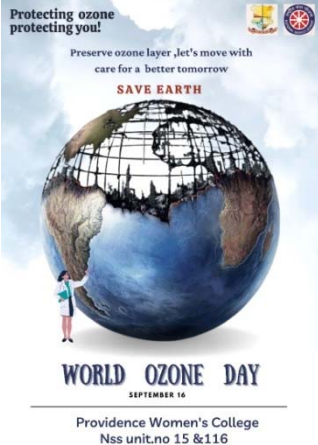
TECHNICAL SUPPLEMENTS

NSS ACTIVITIES: 1 MAY 2021-TILL DATE


Green Campus Initiatives (8 Programmes)

| | | | | | |
|-------------------|-------------------------------------|---|--|---|---|
| 22 MAY 2021 | TRIBUTE TO SUNDARLAL BAHUGUNA |  | | https://anchor.fm/kaathodukaathoram/episodes/A-devotion-to-Sunderlal-Bahuguna-e11e12u | <p>NUMBER OF VOLUNTRS :10 NAME OF VOULNTEERS : Thasni(history),jeevitha(phsycology),fida(physics),sneha(english),devika(english),sinifa(bcom),hilma(history),aleetta(english),dinsha(bcom),arya(maths).</p> <p>Podcast summary: On may 22, the 10 leaders of nss unit of providence conducted a podcaste based on the death of sundarlal bahuguna(famous enviornmentlist).in this part, the leaders were divided in to 3 grupes 1.content creators 2.podcaste 3.editing .this were the 3 groups.in this, 6 leaders were the content creators(thasni,sneha,aleetta,arya,sinifa,devika),and 3 leaders were giving sound to podcaste (hilma,dinsha,fida)and the editer was (jeevitha). And atlast we published the audio on our official podcaste channel kathod kathoram.</p> |
|-------------------|-------------------------------------|---|--|---|---|


| | | | | | |
|----------------------------|--------------------------------------|---|---|--|--|
| <p>5 JUNE 2021</p> | <p>WORLD ENVIRONMENT DAY</p> |  |  | <p>https://anchor.fm/kaathodukaathoram/episodes/--World-Environment-Day-e126t4q</p> | <p>We celebrated Environment day on June 5th, our program was to challenge everyone to gift a tree sapling to kids #GIFTAFUTURE. This was meant to ensure the availability of tree saplings to kids as there is no other means like school or any other gathering will not be conducted in this pandemic situation. And also we accepted the challenge from our district coordinator to plant 10 tree saplings by each volunteer.</p> |
| | |  | | <p>https://youtu.be/Dqm8PQ4nnw</p> | <p>. In order to celebrate this day our group under dinsha proposed an idea of a puppet show. Script writing and sound mixing was done by jeevitha jyothi of psychology department. Another 5 volunteers Rinu, Rose Maria, Rushin, Sabeeha, Sandra, gave their voices. Rifa, our volunteer, was the one who made the beautiful puppets and created the video. The video tells us about the importance of protecting our nature. It also encourages each and every person out there to plant trees. The video was almost 5 minutes. It has been posted in both YouTube and Instagram page @nssprovidence.</p> |

| | | | | | |
|--------------------|--|--|--|---|--|
| 28 JULY 2021 | WORLD NATURE CONSERVATION DAY |  | | <p>https://anchor.fm/kaathodukaathoram/episodes/World-Nature-Conservation-Day-e15465e</p> <p>https://youtu.be/dQ87GCF5zEg</p> <p>Instagram link: https://www.instagram.com/tv/CR3vlowgR3r/?utm_medium=s hare sheet</p> | <p>As the part of world Conservation day, NSS volunteers of Providence Womens college planned to release an animation video regarding the importance of nature . It was presented on 28th July by Arya K and team. Also this animation video had been uploaded to the NSS Youtube channel named Sevanarpana PWC NSS. Due to the covid pandemic all the programme was conducted via google meet . Our Programme officers also talked a few words on that day.</p> |
| 16 Sep 2021 | OZONE DAY |  | | <p>https://anchor.fm/kaathodukaathoram/episodes/World-Ozone-Day-e17e7kc</p> | <p>"Go green, go genius, stamp the carbon, stand tall, and stitch the ozone layer."</p> <p>September 16 World Ozone day.I Vidya lakshmi T , of Zoology presented a podcast on Ozone day.</p> <p>September 16th is observed as World Ozone Day or International Day for the Preservation of Ozone Layer since 1995. It is observed to spread awareness among people about depletion of Ozone layer and to find solutions to preserve it.</p> |


| | | | | | |
|--------------------|---|--|--|---|--|
| | |  |  | <p>Meet link: https://meet.google.com/pyr-jvzv-djs</p> | <p>NSS Units(15 & 116) of Providence Women's College in collaboration with BRING BACK GREEN conducted a webinar on the topic 'Youth Action for Climate Change' in connection with Ozone Day. The webinar was conducted on September 16th , 7 pm via Google meet. Bring Back Green is a Thiruvananthapuram based initiative which comprises youngsters. They have suitable alternatives for plastics. The webinar was led by Mr, Anagh (Green Army Mentor and Project Head, Bring Back Green). He talked about the climate change we experience and their reasons. He suggested many alternatives for plastic materials such as electric scooters, cloth bags, cloth pads, etc. We realised that it is time to change. All the NSS volunteers actively participated in the webinar.</p> |
| <p>19 SEP 2021</p> | <p>CATCH THE RAIN in collaboration with Nehru Yuva Kendra</p> |  |  | <p>https://meet.google.com/hxu-emzh-mib https://pledge.mygov.in/catch-the-rain/</p> | <p>NSS Units (15 & 116) of Providence Women's College in collaboration with Nehru Yuva Kendra, Kozhikode conducted a webinar as part of the campaign 'Catch the rain when it falls' on 19 th September, 6 pm via Google meet. The program was inaugurated by Mr. Sachin Dev (MLA of Balussery) and the Presidential address was delivered by Mr. Sanoop .C(District Youth Coordinator, NYKS). The webinar was led by Mr.Sirajudheen who is a teacher at Govt. Higher secondary school Panoor, a writer, and Mathrubhoomi Seed Best Teacher coordinator award winner.</p> |

| | | | | | |
|-------------------|---|---|--|---|---|
| 19 OCT 2021 | <p>WEBINAR ON AMENDME NT OF FOREST CONSERVA TION ACT 1980 IN COLLABOR ATION WITH THE NGO BRING BACK GREEN</p> |  | | <p>MEET LINK: https://meet.google.com/cvh-dwjt-tpw</p> | <p>On 19/10/21 , we the the NSS volunteers of providence women's college got yet another informative session, which provided several key pieces of information. The topic was amendment of forest conservation act,1980 and we got a apt person to talk about this -Chief guest and speaker of the day Alphonsa, assistant professor, department of Law, university of Calicut. The programme hosted by Jeevitha Jyoti byju of second dc psychology. The seminar began at 7:00 pm with a prayer by rushin of second dc history, then came the welcome speech by vidhula of second dc economics. Then chief guest stresses the need to preserve our environment. The session was interesting and a informative one . After that, the webinar concluded with a vote of thanks by fathima shanza of second dc economics.</p> |
|-------------------|---|---|--|---|---|


The Green Cove Club - 2020




PROVIDENCE WOMEN'S COLLEGE
DEPARTMENT OF COMMERCE
Launching



GREEN COVE



Inaugurated by the Principal Dr. (Sr) Ashmitha
On 5th June 2020
Time : 10 AM
Through Google Meet 

All are invited

As a part of World Environment Day observation, the Department of Commerce launched a new club "**Green Cove**". The club was inaugurated by the Principal, Dr. Sr. Ashmitha *via* Google meet. The aim behind the club was to raise awareness among the students regarding the inevitability of ensuring a healthy and clean environment. Under the club, activities like observing national and international commemorative days, quiz competitions, debates, seminars were conducted for the students by which they had a self-assessment of what they are doing to protect our environment. The club also took on certain projects to support the Green Campus initiatives of the college.

Video release on Nature Conservation

As part of **World Nature Conservation Day**, a short video was launched on 28th July, 2020 in our YouTube channel by the members of Green Commerce club, which reminds us of the importance of nature and the need to protect it.

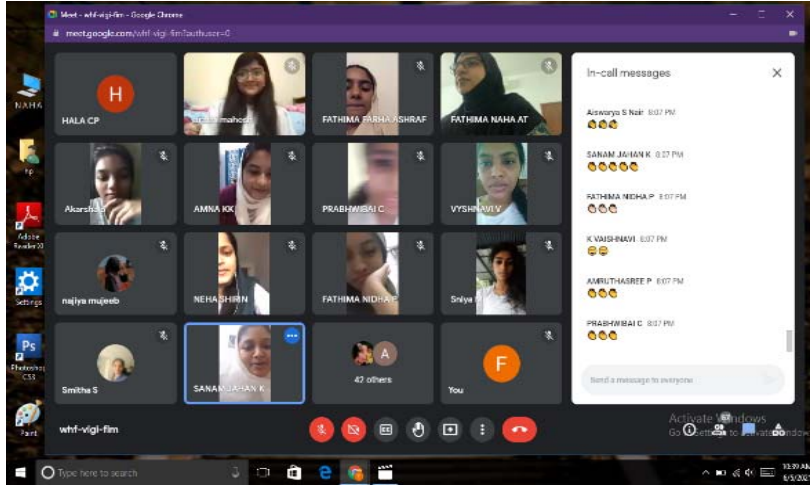
Link to the video – <http://youtube.com/4ftXG8EHIQY>

Green Initiatives under Green Cove Club

- 11TH July - Green cove organized an inter-collegiate Digital poster making competition as part of *World Population Day*. Total of 7 Posters were received from various colleges. The winner of the competition is Ms. Revathi. E of St. Xavier's college of arts and science and was awarded with 1 month recharge coupon as a token of appreciation along with an E-certificate.
- As part of World Population Day, students launched a video in the department YouTube channel "**Maanda**": When things have things to say, under the Green Commerce Club.
- 29TH July – The Club Organized a **Face painting competition** as part of *International Tiger Day* and the Winner of the Competition was Ms. Nakshatra Subhash, 2nd year psychology, Providence Women's College. E-certificate and a cash prize of Rs. 500 was awarded to the winner
- 20TH August - Green commerce club organized a "**National Level Online Quiz Competition**" on 20th August as part of **Indian Akshay Urja Day**. The topic of the Quiz competition is Renewable Energy Sources. Total of 86 participants registered from different states of India. After online registration the participants were added to a WhatsApp group and instructions regarding quiz were provided in the group. Out of 86 participants, 54 of them attended the quiz and those who qualified 60% and above marks were given E- certificates
- 20TH August - As part of **World Mosquito Day**, the club launched an informative video which puts an insight into the contributions of Dr. Ronald Ross to the scientific world on transmission of Malaria. The video includes the precautions to be taken to prevent mosquito bites and the various symptoms of diseases spread by mosquitoes.
- 28TH September - As a part of **Green Consumer Day**, Green commerce club organized an **Online pencil drawing competition** on the topic "Consumerism and its impact on the environment". The winner of the competition was Ms. Anamika P of Karunya Institute of Technology and Science, Coimbatore and the winner were duly facilitated with e - certificate.
- 24TH to 28TH March - One-week online craft making workshop was arranged under **Green cove** for children between the age 10-15 and for College students. The title of workshop was "**Online craft making using waste material**". The Resource persons were Melissa Olivia Cruz (Alumnae), Ananya G.K. and Rahiba of II M. Com. A workshop was arranged on 24th and 25th for children, recorded videos were posted in WhatsApp group, which was later uploaded in the YouTube channel 'calypso'. There were 5 participants between the age 10-15 and all were provided E-certificate after completion of workshop. From 26th to 28th March, online craft making classes were arranged for college students and 7 participants were awarded with E-certificate after completion.

Quiz Environ

The Department of Travel and Tourism Management conducted a department wise quiz competition in connection with the World Environment Day on 5th June, 2020. 67 Students from various departments of the college participated in the program where, Fathima Naha was awarded with the first prize.



Providence women's College, Calicut
Department of Physics
Presents
**WEBINAR
ON
WORLD ENVIRONMENTAL DAY**
5th JUNE 11:30 am
Resource Person
Dr. RAJASREE VPM
Post doc Fellow
Centre for Atmospheric and Climate Physics Research (CACR)
University of Hertfordshire, College Lane, Hatfield, AL10 9AB, UK



Environment Day Webinar

As part of World Environmental Day, Department of Physics, Providence Women's College conducted a webinar on the topic Tropical Cyclones. The webinar was conducted via Google meet on 5th June, 2020. The chief guest of the day was Dr. Rajasree VPM who is a post doc fellow at the Centre for Atmospheric and Climate Physics Research (CACR) University of Hertfordshire, UK. 48 participants including the students and teachers were enrolled for this online meet up.

Sustainability day pledge

As part of **Sustainability Day**, Green cove released a video to remind the human community the importance of caring for the environment, to reduce plastic use and to plant more trees to protect nature. Students of the Commerce Department also took a pledge on October 28th to ensure a plastic free environment. 52 students participated in the event.

Digging for the future – Compost pit making by the NSS volunteers

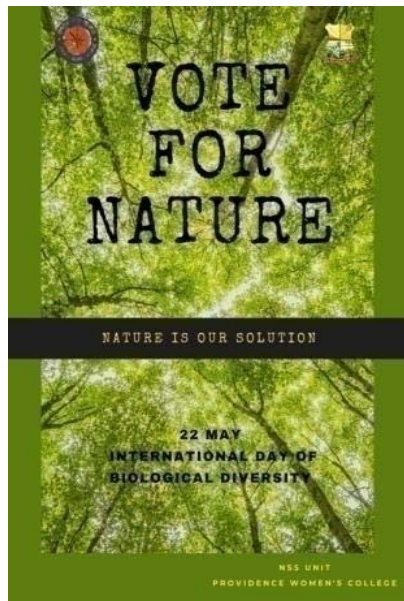


The SS volunteers prepared Dry leaf compost on 21st December, 2020 in their home premises. Dr. Vidya explained the process of making the dry leaf compost. All the volunteers got hands-on experience on creating their own compost pits within their home compound by means of YouTube video tutorials.

Clean Veggies in Clean Campus – An Effort of the NSS unit

As the part of Covid 19 pandemic outbreak and lock down, college was closed for several months which resulted in the overgrowth of the crop plants and dominance of weeds in the vegetable garden. With the active participation of the NSS volunteers, 11th to 14th January, 2020 restoration of the same was carried out by proper weeding and replantation. The perishable crops were replaced by drought resistant crops like tapioca for an increased possibility of sustenance during the unpredictable conditions of the pandemic period.





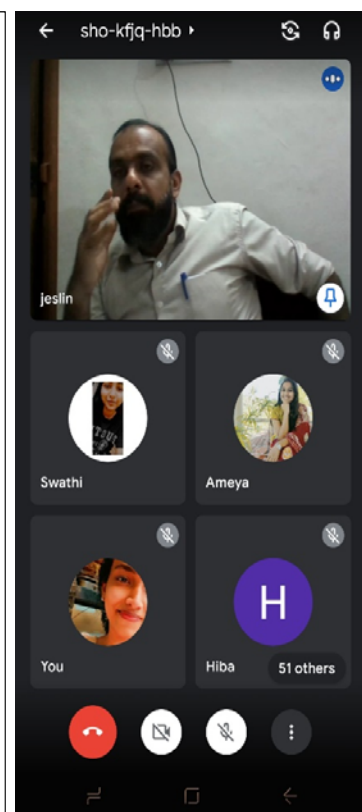
A Tribute to Sunderlal Bahuguna

On 22nd May, 2021 the 10 leaders of the NSS unit of the college made a podcast based on the contributions of Sunderlal Bahuguna, the renowned Indian environmentalist. The leaders were divided into 3 groups – content creators, Podcast makers and the Editing team. The Audio was released officially in the Podcast channel – 'Kathod Kathoram'. The link to the same is <https://anchor.fm/kaathodukaathoram/episodes/A-devotion-to-Sunderlal-Bahuguna-e11e12u>



A Ray of Hope

The Department of Psychology organized a talk on 31st May 2021, via Google meet so as to make students aware of the importance of eliminating the use of Tobacco and their role in supporting the affected class of people in the society. The Consultant psychologist Mr. Binu Raj served as the resource person



Words from the Peers

The Department of English in association with Environment Club organised a talk on environment ethics in times of Covid 19 pandemic. The speaker was Prof. Shobeendran T., the renowned environmentalist. The programme was conducted online on Google meet platform on 2nd June, 2021 at 4 p.m.

The link for the online programme was <http://meet.google.com/mex-uaix-kxx>



GRASS ROOTS
DEPARTMENT OF ENGLISH
PROVIDENCE WOMEN'S COLLEGE
CALICUT-673009

ONLINE WEBINAR

**ENVIRONMENTAL ETHICS IN
TIMES OF COVID-19 PANDEMIC**

INVITED TALK BY PROF. T. SHOBEENDRAN

Inauguration : Dr. Sr. Ashmitha
(Principal, Providence Women's College)

Felicitation: Dr. Minoo Divakarn
(IQAC Co-ordinator)

**JUNE 2, 2021
4 PM- 5 PM**



Professor T. Shobeendran is a full-time environmentalist and former Professor at Zamorin's Guruvayurappan College, Kozhikode
A recipient of Vanamitra Award by Government of Kerala in 2006 and Vriksha Mithra Award by Government of India in 2007



Quite often the generation that is responsible for the environmental degradation is not the one who pays the price. So it is high time that we need to be alert to understand that we should not put our future generation in danger as we pursue our own satisfaction today.

#GIFTAFUTURE
On this World Environment Day each of us are gifting a tree sapling to a child with a message to conserve the environment.

JOIN US BY ACCEPTING THIS CHALLENGE.

If you dare to take up the challenge, share the images of gifting a tree sapling to a child with the hashtag #GIFTAFUTURE on our Instagram page

NSS UNIT 15 & 116
PROVIDENCE WOMEN'S COLLEGE

 nss_providence

The Altruistic Approach

On the occasion of the World Environment Day, the NSS unit of the college offered a challenge named **#GIFTAFUTURE**. The event was meant to ensure the availability of tree saplings to kids as there were no other means like school or other gatherings during the pandemic situation. The participants posted the hash tagged photographs of gifting a tree sapling to their kids on Instagram.

Along with this, the volunteers also accepted the challenge of planting 10 saplings each which was initiated by the NSS District Co-ordinator.

<https://anchor.fm/kaathodukaathoram/episodes/--World-Environment-Day-e126t4q>



PROVIDENCE WOMEN'S COLLEGE

Meet My Tree!

A virtual meet of tree saplings on World Environmental Day



Let our tree saplings meet each other on June 5th from 9:00-9:30. Join us at meet.google.com/ajn-eumt-bjb

Meet my Tree

The NSS unit of the college organized “meet my tree campaign” via Google meet on 5th June, 2021.

As a part of World Environment Day observation, each volunteer planted a tree sapling (total of 100 saplings) at their houses and each of them showed their saplings to each other through a video conference.



The Puppet show - Message in Marionettes

An elegant part of the World Environment Day observation was the puppet show designed by the NSS volunteers. Rifa made the beautiful puppets and did the videography for the same. Script writing and sound mixing was done by Jeevitha Jyothi of the Department of Psychology. The NSS volunteers Rinu, Rose Maria, Rushin, Sabeeha, and Sandra provided the vocals. The 5 min. video which explains the importance of protecting nature by planting trees, has been uploaded in both YouTube and Instagram page @nssprovidence.

https://youtube/Dqm8_PQ4nnw

Providence women's college

COGREECEN

Environment day program

BACKYARD BEAUTY

Send us a small video of ur garden
and win the contest
(duration of video: 1-3 mins)

**LAST DATE FOR
SUBMISSION OF
ENTRIES: 05/06/2021
3PM**

Exclusively for students
of Providence women's
college

Sanaa: 7034803814
shada: 89430 17975

Home Garden Contest

An online garden contest was arranged for students of Providence Women’s College on 5th June 2021 in connection with world environment day 2021. Students were encouraged to make homestead gardens and were asked to submit videos of the home garden for judgement.

A total of 15 entries were received. Sadiya (2 sem Computer Science) on the first prize. Alka VJ (5th sem Psychology) and Fathima Thahaniya P (2 sem Psychology) bagged 2nd and 3rd prizes, respectively.

Maintenance of Herbal Garden



An herbal garden is maintained in the campus including 78 species of medicinal plants which include mostly herbs. A few shrubs and trees are also planted. As a special section, a home remedy corner is also maintained associated with the herbal garden. 15 PG students

Green Earth-Clean Earth

On behalf of World Environment Day-2021 Department of Travel and Tourism Management observed "Green Earth-Clean Earth" program on 5th June, 2021. Quiz Competition, a Jumbled Word program and This/That program were the competitions conducted. Videos of the drawings done by the students was presented along with the videos showing the growth of green gram and collage on World Environment Day, which were also prepared by the students. Speech on the use of Plastic by the students was the highlight. The program was conducted to give awareness to everyone about our mother Earth and how to protect, maintain and sustain her for the future generations.



DEPARTMENT OF BUSINESS ADMINISTRATION
PROVIDENCE WOMEN'S COLLEGE

A GREEN CAMPUS INITIATIVE

Merika

SKILL EXPO

cloth bags & purses

Handmade
cloth bags
at affordable
prices

Place your
order
now!

LET'S BE AN ENVIRONMENTALLY CONSCIOUS CONSUMER

MERIKA – Skill Expo

MERIKA is a green campus initiative by the Department of Business Administration of Providence Women's College. The objective of this initiative is to promote the usage of cloth bags over polythene bags which is extremely hazardous to the environment. Our students Ms Maneesha K and Ms Rudha M P of II BBA were assigned to stitch and distribute these cloth bags and purses in our campus. The unused fabrics from shops were collected and hand stitched by our students to produce good quality reusable cloth bags. These products were available for sale at affordable prices at the college campus. It was a huge success as many students purchased these bags and switched to an environment friendly lifestyle. Moreover, the profit obtained from this initiative was used for charity programs organised by the BBA department for various contributions towards old age homes and schools.



DEPARTMENT OF COMPUTER SCIENCE
PROVIDENCE WOMEN'S COLLEGE

1 HOUR E-WASTE CHALLENGE



Be cautious E-waste in your house will ruin your health...

For a better tomorrow and for a healthy world
#stayhome #staysafe
and make your free hours worth.

ALL YOU HAVE TO DO IS:

- Take 1 hr from your daily life routine
- Collect all the E-wastes
- Bring to college after reopening
- We will collect it from you

Clearing the E-Trash

The Department of Computer Science launched the E-Bin programme on 10th June, 2021 which enabled the appropriate disposal of the E-wastes from the campus as well as from the homes of the staff and students. The 1hour E-waste challenge was extremely successful where the wastes could be collected in a broad scale and handed over to the concerned authorities for its ecologically safe disposal.

E-BIN

10-06-2021



DEPARTMENT OF COMPUTER SCIENCE
PROVIDENCE WOMEN'S COLLEGE, CALICUT



SEED PEN DISTRIBUTION

23-06-2021

DEPARTMENT OF COMPUTER SCIENCE
PROVIDENCE WOMEN'S COLLEGE, CALICUT

The students of the Department of Computer Science brought up the seed pen concept. They learned to make pens using paper and a seed at its tip so that, after use even it is disposed carelessly, it would degrade as well as the seed would germinate to form a plant. 100 pens were made and distributed in the campus among the staff and students.





Our Buds as Resource Persons

Megha Suresh of II PG English presented an online talk titled "A Peep into the After-Effects of War and Human Activities on the Environment: Gone with the Wind from an Eco-Feminist Perspective" in the Invited Student Talk Series, organised as part of the World Environment Day 2021 observance organised on 26th July, 2021, by Al-Shifa Arts and Science College, Perinthalmanna.



International Ozone Day Observation

The students of the Department of English made an awareness video on the importance of preserving the environment and the ozone layer, for a better future. The programme was on 16th September, 2021. The link of the video is <https://youtu.be/Wp9DkIYdevw>



Conserving Mother Nature

An animated video was released by the NSS volunteers of the college as a part of observing World Nature Conservation Day on 28th July, 2020. The session was conducted online wherein the programme officers presided over the gathering. The video explains the importance of conserving nature and our role in fulfilling the same. The presentation was done by Arya K. and team and later the video was uploaded in the NSS YouTube channel – Sevanaparwana PWC NSS.

<https://anchor.fm/kaathodukaathoram/episodes/World-Nature-Conservation-Day-e15465e>

<https://youtu.be/dQ87GCF5zEg>

Instagram link:

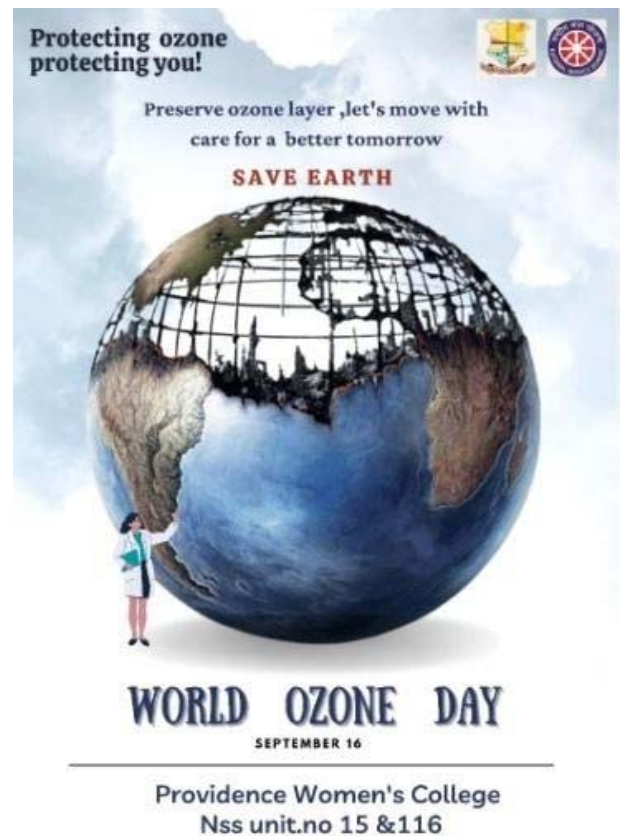
https://www.instagram.com/tv/CR3vlowgR3r/?utm_medium=share_sheet

**"Go green, go genius, stamp the carbon, stand tall,
and stitch the ozone layer."**

September 16th is observed as World Ozone Day or International Day for the Preservation of Ozone Layer since 1995. It is observed to spread awareness among people about depletion of Ozone layer and to find solutions to preserve it. As a part of the observation of International Ozone Day of this year, Vidyalakshmi T. of the Department of Zoology presented a podcast on 16th September, 2021.

The link for the same is:

<https://anchor.fm/kaathodukaathoram/episodes/World-Ozone-Day-e17e7kc>



Inter-Collegiate Quiz on Ozone

On behalf of observing International Ozone layer, the NSS unit of the College conducted an Inter- collegiate online Quiz competition to create awareness and to conscientize students about the need to protect the Ozone layer of the Earth’s atmosphere. The registration was done through Google doc form on 16. 9. 2021. Nearly 300 students from more than 20 colleges got registered for the event. 160 students including 40 male participants attended the Quiz. E-certificates were issued to the students who secured a score of 80% and above.

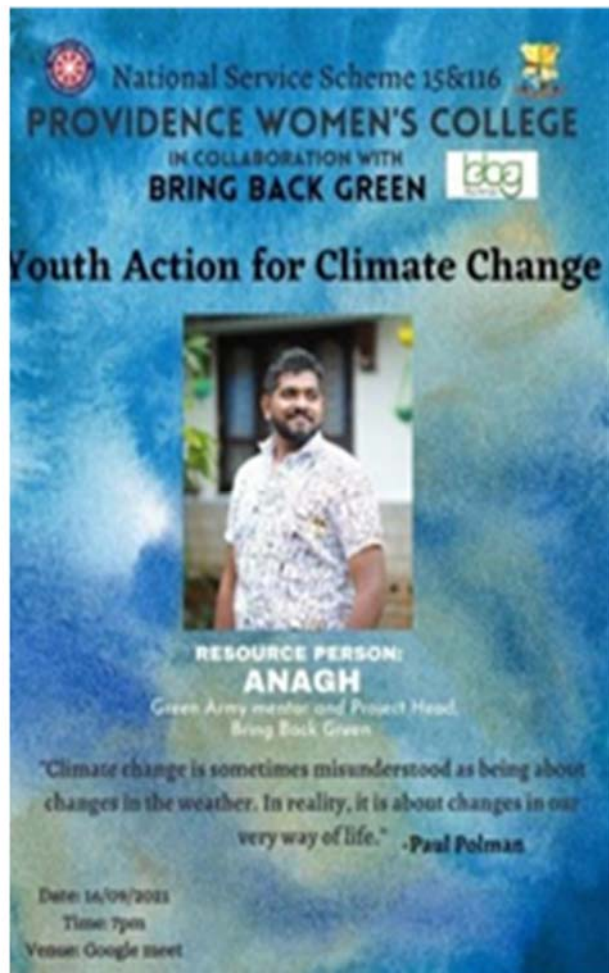
Catch the Rain Campaign

The NSS Units (15 & 116) of Providence Women's College in collaboration with Nehru Yuva Kendra, Kozhikode conducted a webinar as part of the campaign 'Catch the rain when it falls' on 19th September, 6 pm via Google meet.

The program was inaugurated by Mr. Sachin Dev (MLA of Balussery) and the Presidential address was delivered by Mr. Sanoop .C (District Youth Coordinator, NYKS). The webinar was led by Mr.Sirajudheen, the renowned writer and teacher at Govt. Higher Secondary School Panoor, and also the winner of Mathrubhoomi Seed Best Teacher coordinator award.

<https://meet.google.com/hxu-emzh-mib>
<https://pledge.mygov.in/catch-the-rain/>





Youth Action for Climate Change

A webinar was organized in alliance with BRING BACK GREEN - a collective of young people working as a NGO based at Thiruvananthapuram. It was conducted on behalf of the observation of International Ozone Day on the topic "Youth Action for Climate Change" on 16th September, 2021 *via* Google meet.

The webinar was led by Mr. Anagh (Green Army Mentor and Project Head, Bring Back Green). He explained the climate change we experience and the reasons for the same. He suggested and encouraged to use alternatives for plastic materials such as electric scooters, cloth bags, cloth pads, etc. The session reminded that its high time to change the routine plastic usage and adverse practices.

<https://meet.google.com/pyr-jvz-djs>

Maintenance of Campus Biodiversity Register (flora)

A campus Biodiversity Register was prepared, joining hands with Kerala State Biodiversity Board in 2009. The register is maintained and updated every year. According to 4th October, 2021, a total of 538 species of angiosperms belonging to 117 families, 6 species of gymnosperms belonging to 4 families, 11 species of pteridophytes under 4 families, 7 species of bryophytes under 3 families and 7 types of special collections including Dasapushpangal, Nalpamaram, Birthstar plants, Dasamoolangal, Thriphala, Trikatu, Sugandha triphala etc. were recorded during the year 2021. 15 PG students participated in the survey for recording the species on the campus.

SKILL DEVELOPMENT PROGRAMS

Green Skill Initiatives



BONSAI MAKING

CREATE YOUR BONSAI GARDEN
The art of growing ornamental, artificially dwarfed varieties of trees and shrubs in pots. A method to grow ornamental and economically important crops in pots.

MUSHROOM CULTIVATION

GROW NUTRITION, EARN MONEY
Mushroom cultivation is a mixed type (a seasonal farming as well as high-tech industry). It can help to reduce vulnerability to poverty and strengthen livelihoods through the generation of a fast yielding and nutritious source of food and a reliable source of income.



BIOFERTILISER TECHNOLOGY

FOR A CLEAN GREEN ENVIRONMENT
Learn preparations containing living cells of efficient strains of microorganisms that help crop plants' uptake of nutrients by their interactions in the rhizosphere when applied through seed or soil.



VEGETABLE CULTIVATION

BREATH HEALTHY EAT HEALTHY
A rewarding activity that provides fresh, flavorful produce. It offers many benefits, including exercise, fresh air, landscape beautification in addition to promoting a varied and nutritious diet at a lower cost by reducing food expenditures.



VERMICOMPOSTING

DECOMPOSE ORGANIC WASTE
Vermicomposting is the process by which worms are used to convert organic materials (usually wastes) into a humus like material known as vermin-compost. An environment friendly and economic process to decompose waste.



**NATURE CLUB, DEPT OF BOTANY
PROVIDENCE WOMEN'S COLLEGE KOZHIKODE KERALA**

The Vibrant NATURE CLUB

The Department of Botany in association with the Nature Club of Providence Women's College organized a series of skill development programmes to enhance the practical knowledge and skills of the students. It includes Bonsai making, mushroom cultivation, Biofertilizer technology, Organic farming, Vermicomposting. The details of each day's program are as follow:

Bonsai Making – A Green Skill Initiative

A class on bonsai making was organised for students of 3 BSc and 2 BSc Botany on 10th October 2021. Training on making different styles of bonsai, like upright, formal slanted, informal slanted, and cascade etc. were shown. The theory part was online, which was followed by online demonstration sessions. 20 selected students participated in the training programme.



BONSAI MAKING

MINOO D'KARANS



Mushroom cultivation

A class on mushroom cultivation was arranged through google meet online platform on 11th October 2021 for 30 students from 2 & 3 year BSc Botany. Cultivation technique of oyster mushrooms were demonstrated. Economic importance and nutritional benefits of mushrooms, were dealt with in detail. Marketing strategies of mushrooms, preparation of value-added products from mushroom were also explained.

MUSHROOM CULTIVATION



Minoo d'karans







Biofertilizer Technology

A training programme on the preparation of biofertilizers using eco-friendly stuff was arranged on 12th October 2021. Benefits of different types of biofertilizers, their preparation methods etc. were dealt in detail. The training was imparted for 20 selected students from 2nd year BSc Degree class.


Concept of biofertilizer

Biofertilizers

The term biofertilizer refers to preparation containing live microbes which helps in enhancing the soil fertility either by fixing atmospheric nitrogen, solubilization of phosphorus or decomposing organic wastes or by augmenting plant growth by producing growth hormones with their biological activities.



Rhizobium Bacteria Bacteria in root surface Bacteria in root surface Legume Inoculation




Practicing Organic Vegetable Farming

A class on was conducted on 14-10-2021 for PG students. Organic vegetable farming, the production system that relies on biological processes and natural materials to manage soil fertility and pest populations and to promote healthy crop growth. Detailed structure. Lessons on preparation of bed, use of organic fertilizers, use of organic pest control mechanisms etc. were dealt in detail.

ORGANIC VEGETABLE GARDEN

- Synthetic chemicals are used to control insect-pests, diseases., affect physiological processes and conditions such as flowering, fruit setting, colour development and ripening.
- Use of chemical fertilizers especially nitrogenous fertilizers leads to degradation of the earth environment and outbreaks of aphid and other sap-sucking pests.
- Insecticides kill natural enemies of weeds; fungicides soil micro-organisms that control nematodes; and reduce earthworm population, lowering soil fertility and water infiltration rates.
- Organic farming excludes the use of synthetically compounded fertilizers, pesticides, growth regulators
- relies upon crop rotation, crop residues, animal manure, green manure, legumes, off farm organic waste, mechanical cultivation, mineral bearing rocks and aspects of



Vermicomposting

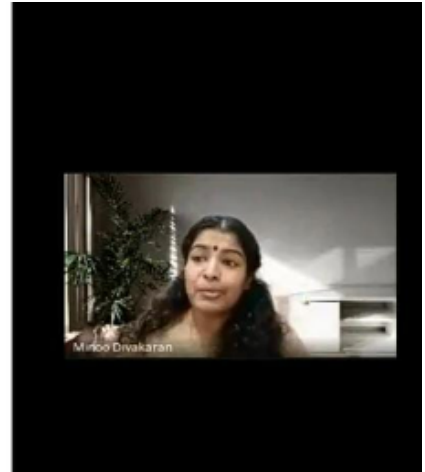
An online training session on vermicomposting was arranged on 14th October 2021. Two methods of vermicomposting - vermicomposting in bin and vermicomposting in vermicompost pile were demonstrated. 30 students from 3rd year BSc Botany attended the class.

Why composting?

Solid waste is the one of the biggest environmental challenges facing the world today due to increasing population and urbanisation.

Composting is a natural process of organic waste treatment which is currently practised with various modification to the technology

- about 70 % of municipal waste is normally organic
- recycling at source is most economic and environment friendly method of waste management
- compost is valuable resource for farmers
- composting at source keeps inorganic waste clean and makes it easier for recycling



Plant Propagation Techniques

A training programme on plant propagation methods was organised on 15th October 2021. Conventional and other types of propagation methods including cuttings, budding, grafting, layering etc. were demonstrated. 42 students from 2 year BSc Botany attended the training programme.



Making Kokedama



KOKEDAMA making
Video from Mino Divakaran
www.youtube.com

<https://youtu.be/XtWDj2zShYg>

11:05 AM

An online training programme on kokedama making was conducted on 23-11-2021 for 94 students including BSC and MSc students of Botany. Students prepared their own kokedamas using the technique demonstrated. The demonstration video was uploaded in the YouTube channel for further reference. The image shows the Kokedama [prepared by the students.





Webinar - Bring Back Green

The NSS unit of the college organized a webinar on Webinar on Amendment of Forest Conservation Act 1980 in Collaboration with The NGO - Bring Back Green 19th October, 2021. The Chief guest and Speaker of the day was Ms Alphonsa Jojan, Assistant Professor, Department of Law, University of Calicut. The programme hosted by Jeevitha Jyoti Byju of the Department of Psychology.

MEET LINK: <https://meet.google.com/cvh-dwjt-tpw>

Clean Campus

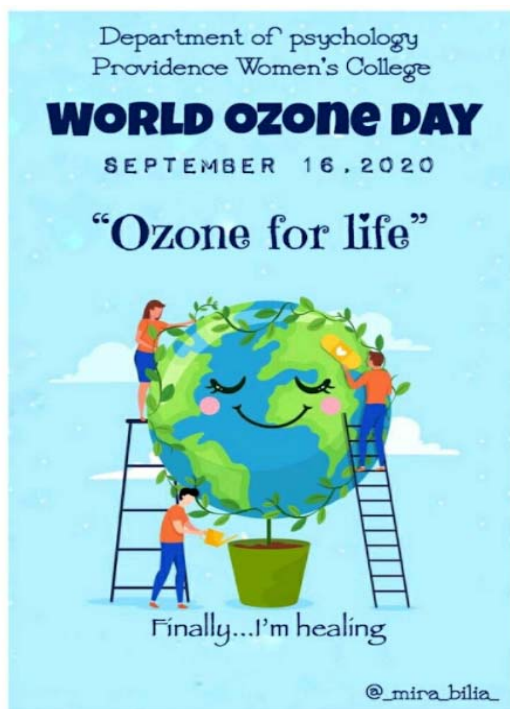
The students of the College get in to the campus regularly do as to maintain the premises clean and beautiful. As a part of Green Campus Initiative, NSS volunteers and the students of Department of Psychology took part in the Clean Campus Campaign on 10th November, 2021.



Undertaking the Energy Conservation Pledge

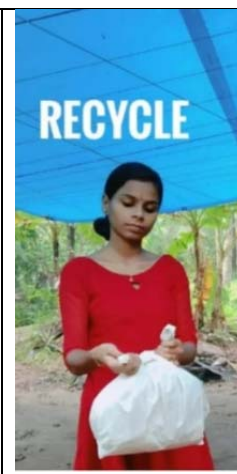
The students and teachers of the College undertook the pledge for the conservation of the non-renewable energy resources available. The programme was organized by the Department of Physics in according to the instructions of the Ministry of Environment, Forest and Climate change.





Planting & Recycling Programme

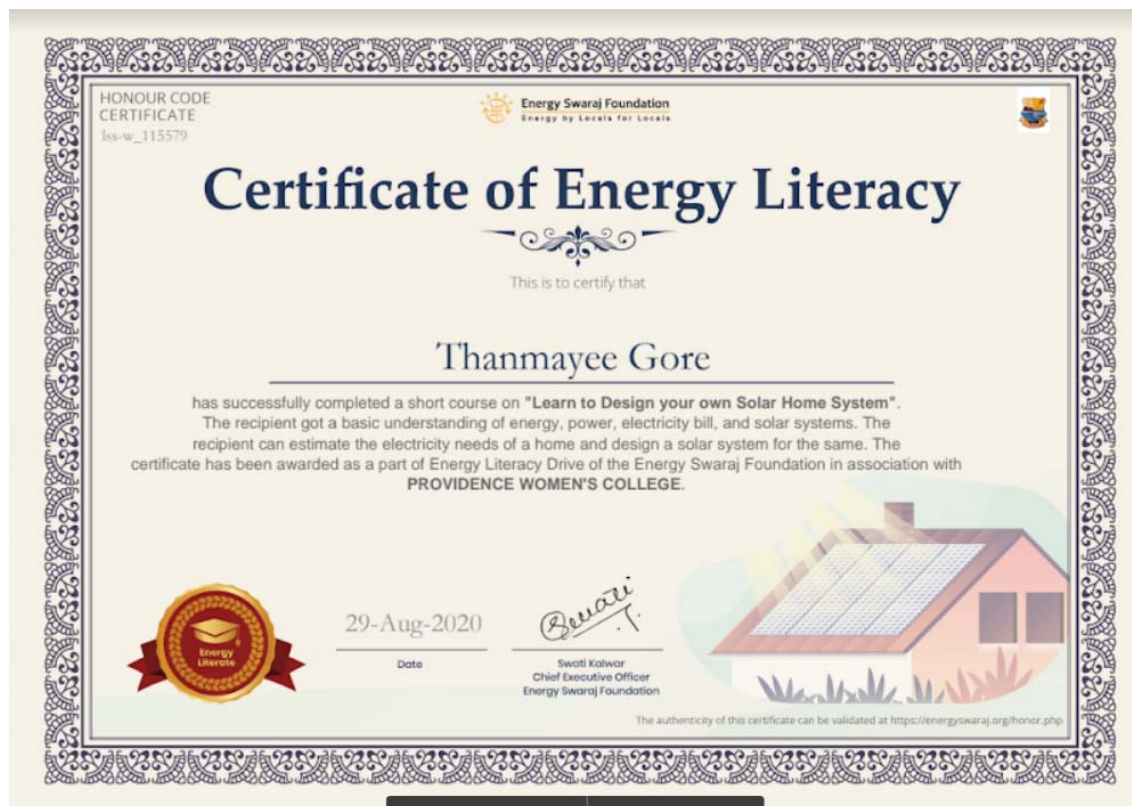
As a part of Observing the World Ozone Day, the Department of Psychology organized a mission to plant trees and remove the plastic wastes into a recyclable form. Students and of the department participated in the programme held on 16th September 2020.



Course on Energy Literacy

Learn to Design a Solar System” is a course, which gives a unique opportunity to become Energy Literate irrespective of their educational background and experience. Department of Physics conducted an Energy Literacy Drive in association with Energy Swaraj Foundation with a course on "Learn to Design your own Solar Home System". The recipient got a basic understanding of energy, power, electricity bill, and solar systems. The recipient can estimate the electricity needs of a home and design a solar system of energy for the same. Students above the age 14 could attend the course. There are 15 videos in the course. Students need to watch each and every video to successfully complete the course. Students must clear the quiz to get the certificate. For detailed instructions, the department organized an awareness session for people in different regions of Kerala. About 365 students registered for the program. Those students who scored above 25% were awarded with the e-Certificate.

https://energyswaraj.org/take-quiz.php?organization_id=organization_1599



PROVIDENCE WOMEN'S COLLEGE
DEPARTMENT OF MATHEMATICS AND STATISTICS

PRESENTS

“SUBMIT” YOUR SHOT

PHOTOGRAPHY CONTEST
In connection with
JUNE 5
WORLD ENVIRONMENT DAY

Show us your best shot of nature and win exciting prizes.

Send your entries to the mail id
mathbreakers2020@gmail.com

Don't forget to mention your name, college and contact number
Entries must be uploaded by June 4th 2021, 5 PM

REWARDS

- 1 Month Recharge
- Talktime
- Data addon

For updates and queries
contact us on @_limit_breakers_
INTERCOLLEGIATE



Inter-collegiate Photography contest

In connection with World Environment Day, the Department of Mathematics conducted an Inter-Collegiate photography contest. 73 participants from various colleges participated. The winners were announced and gifted with special rewards.



Nilishna VR
Govt. College Madappally



Thulasi S
St. Joseph's College,
Irinjalakuda



Harinandan
SNGC, Chelannur

PROVIDENCE WOMEN'S COLLEGE
Department of Business Administration

World Environment Day

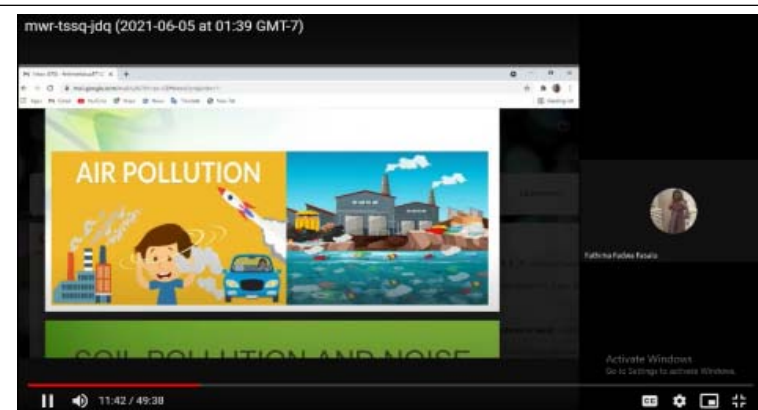
Webinar for kids on June 5 2021 @ 2PM



SAVE THE PLANET
WORLD ENVIRONMENT DAY

Interaction with the Kids

On behalf of the World Environment Day observation, the Department of Business Administration conducted a Webinar for the school kids. The session was carried out by Fadwa Faslu where the discussions on Sustainable Development, Cleaning the Environment, 3Rs and Biodiversity. The feedback of the students were collected which showed the active participation and benefit for the students.



PROVIDENCE WOMEN'S COLLEGE
DEPARTMENT OF COMMERCE



PROVI VENTURES

ENTREPRENEURSHIP DEVELOPMENT CLUB
ONE WEEK ONLINE COURSE FOR HOUSEHOLD WOMEN
DIY FOR ENVIRONMENT CONSERVATION

- VERTICAL GARDEN
- MICRO GREEN SEEDS

GOOGLE MEET INTERACTION

MON-FRI JUN-28TH-JUL-2ND

COORDINATOR'S
ANANYA, NEETHUSHA



E - CERTIFICATE WILL BE PROVIDED ON THE COMPLETION OF COURSE

FOR MORE DETAILS:8197684939,9349727103

DIY Courses for Women

The Department of Commerce organized a One Week online course for household women. DIY for environment conservation under which sessions on vertical garden and Micro green seeds was provided for household women. The coordinators of the course were Ananya T. B. of III B. Com and Neethusha of II B. Com.

The first two days (28th -29th June) dealt with the method of creating hanging garden using unused plastic bottles. 14 members participated in the event on the first day and 13 on the second day.

Day 3 (30th June) was involved in Microgreen concept in which waste plastic cups were utilized. 12 members participated in the same.

Day 4 (1st July) dealt with creating gardens in balcony using the throw away plastics. 11 members participated in the event.

Day 5 was engaged with the green innovative thoughts to beautify the gardens. 22 members participated on the last day of the workshop.

The event was really interesting and enriching for the home makers.

