ENVIRONMENTAL AUDIT

Yogi Vemana University, YSR Kadapa

Report - 2019-20

Prepared by

LEE SHREYUS FOUNDATION

Hyderabad

ENVIRONMENTAL REPORT
Yogi Vemana University, YSR Kadapa
2019-20

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4.	Registrar	-	Prof. D. Vijaya Raghava Prasad
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11.	Member, IQAC		- Dr. R.V.Jayanth Kasyap
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PREFACE

Environment is relationship between human and its surrounding. Due to the imbalance in this relationship the environment is degrading at much faster rate than our imagination. It is evident that most of these degradations are caused by human activities. To protect, manage and minimize the damage to environment, environmental education is necessary. Such environment education to students is to impart knowledge, create awareness, inculcate attitude of concern and provide skill to handle the environmental challenges. This also helps institution to setup environment technologies and conserve available natural resources.

Yogi Vemana University understands that it is duty of current generation to leave the present environment as good as or better than today for future generation. And the college going students' are the young and energetic citizens with varied ideas. University has always been keen on inculcating such attitude towards environment amongst the students.

In view of the above, University has intended to conduct the environment audit of their campus and understand the present practices and sustainability regarding various components of environment. This report is prepared with the support our organization expert team.

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CHAPTER - 1
INTRODUCTION

1.1 INTRODUCTION TO ENVIRONMENTAL AUDIT

Audits enable the management of an organisation to see exactly what is happening within the organisation and to check the operation (or otherwise) of systems and procedures. Some environmental auditing programmes have been motivated by the occurrence of an environmental problem or incident, that is, a reactive response; others have been established in response to a desire to anticipate and head off potential problems, that is, the organisation takes a proactive stance. The incentives for environmental auditing, and the objectives an organisation will have in undertaking such an audit, have diversified since the early days of environmental auditing. This diversification reflects the increasing awareness of environmental issues, which is present in society as a whole, and the realisation by organisations of the need to integrate these issues into all aspects of their activities.

Environmental auditing can help to reveal the likely weaknesses of an organisation's strategy, therefore reducing the risk of unexpected events. A properly prepared and conducted environmental audit will bring real benefits to an organisation committed to act on the results.

Environmental audit is a systematic, documented, periodic and objective review by regular entities of facility operations and practices related to meeting environmental requirements. In other words, it is a management tool comprising systematic, documented, periodic and objective evaluation of how well environmental organization, management and equipment are performing with the aim of helping to safeguard the environment by facilitating management control of practices and assessing compliance with company policies, which would include regulatory requirements and standards applicable.

Environmental auditing is essentially an environmental management tool for measuring the effects of certain activities on the environment against set criteria or

standards. Depending on the types of standards and the focus of the audit, there are different types of environmental audit. Organization of all kinds now recognize the importance of environmental matters and accepts that their environmental performance will be scrutinized by a wide range of interested parties. Environmental auditing is used to investigate, understand and identify.

These are used to help improve existing human activities, with the aim of reducing the adverse effects of these activities on the environment. An environmental auditor will study an organizations environmental effects in a systematic and documented manner and will produce an environmental report.

1.2. OBJECTIVES

- To introduce and make aware students and management on the real concerns of environment and its sustainability practices.
- To secure the environment and cut down the threats posed to human health by analyzing the pattern and extent of resource use on the campus
- To establish a baseline data to assess the future sustainability by avoiding the interruptions in environment that are more difficult to handle and their corrections may requires high cost
- To bring out a present status report on environmental compliance

1.3 METHODOLOGY

This include data collection from facilities such as physical inspection of the campus, observation and review of the documentation, interviewing key persons and data analysis, gaps and recommendations. This study covers various aspects of environment as mentioned in the report.

Documentation of the overall buildings in the campus, and therefore the constructed and non-constructed areas were estimated. Campus visit, existing documents review and assessment was done by the expert team with the support of team from university. Data was jotted down based on a prepared data sheets before

and during the walk through audit, while some other unanswered questionnaire fields were completed after the walk through. Original electricity bills were reviewed to understand the consumption of the campus. Similarly the other components data were collected and reviewed by the expert team.

1.4 UNIVERSITY PROFILE

Named after a renowned saint - poet, thinker and philosopher Yogi Vemana, the University, established in the year 2006, by an Act of A.P state legislature is a blessing and boon for the students and researchers of the backward Rayalseema region in general and Y.S. R district in particular. The erstwhile Sri Venkateswara University Post Graduate Centre was elevated to a University with a humble and noble intention of providing a more conducive environment to impart value-based education and promote quality research and service. The university is committed to nurture and uphold healthy academic standards which contribute to the social, intellectual and moral development.

The university is situated about 15 kms away from the historic Kadapa City on the Kadapa -Pulivendula road amidst serene surroundings and has a sprawling campus of about 700 acres. With a humble beginning, the university made rapid strides towards overall development and has sufficient infrastructural facilities such as buildings with academic ambience, library, modern science and research laboratories equipped with sophisticated instruments, Super Computer facility, Agri-Science Park, spacious hostels, gym, daycare centre, Botanical Garden and a vast playground. Besides, a a building complex was added for the purpose of conducting training short term vocational and job oriented courses on a continuous basis. At present the university has on its rolls 115 faculty members and about 200 non-teaching staff. The young faculty has rich research experience in India and abroad besides teaching. Presently about 1800 students are pursuing postgraduate and research programmes. Majority of the science faculty have obtained research projects from central funding agencies such as DST/ CSIR/DBT/MNRE / ISRO/UGC/MoES /BRNS /APCOST and considerable number of projects are under progress. The university was accorded 2 (f) recognition in 2007 and 12 (B) status in 2011 by the University Grants Commission, New Delhi. Presently it is an affiliating university with about 100 Post graduate, degree, law, B.Ed, MCA ,MBA and Physical Education colleges under its jurisdiction.

In the recent past, the university-initiated steps to launch women's cell, equal opportunities cell, a Day Care Center and coaching programmes for SC/ST/OBC/ minority students preparing for competitive examinations. The C.P Brown Library, now elevated to the status of a languages Research Center of the university, located in Kadapa town, has rare books, ancient documents and monographs and efforts are made to preserve and protect ancient literature.

In tune with the contemporary societal, scientific and technological needs the university with 27 departments is offering conventional and inter-disciplinary courses in basic and applied sciences, humanities, social sciences and management. The university launched two five year M.Sc integrated courses, namely Earth Sciences and Biotechnology & Bio-Informatics in 2007. The University also started research programmes leading to PhD in the year 2010 and currently about 170 research scholars are pursuing research in 27 different Departments. To give a fillip to engineering education, the university in the year 2008 started YSR Engineering College in Proddutur, a major town in Y.S.R district and an industrial hub. Currently it is offering graduate courses in Engineering disciplines of Civil, Mechanical, Electrical & Electronics, Electronics & Communication, Computer Science and Metallurgy & Materials Technology, and about 850 students are on the rolls. The university will be holding its very FIRST CONVOCATION on 5th November 2012, About 1000 PG students will be receiving their degrees and 30 among them will be receiving GOLD MEDALS sponsored by Donors.

Vision

1. Envisaged to flourish in the academic domain as one of the globally renowned public universities.

2. Safeguarding the spirit of true education and strive for human and academic excellence.

3. Creating a vibrant and vigorous environment for scientific, intellectual and moral enrichment

4. To adapt best pedagogical practices that sharpen the intellect, stimulate the aptitude and strengthen the attitude of the students.

5. To update the required skills in order to efficiently compete in the world of cut throat competition.

6. To introduce and design useful, innovative and relevant courses in tune with the needs of society, academia and industry.

7. To equip the students with the required employability skills by providing proper guidance and direction.

8. To ensure complete objectivity in evaluation by following healthy practices.

9. To serve as a beacon light for the society to progress and prosper in all fronts

Mission: The University aims at

1. Becoming a seminary for enhancing knowledge and a resource centre for research and socially useful activities.

2. Establishing collaboration with world class institutions with a deep sense of sharing knowledge and its benefits.

3. Enabling and empowering the students by tapping their talents and channelizing their abilities.

4. Encouraging the students, researchers and faculty to take up the challenges and contribute purposefully to the overall progress of the nation.

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1.5 UNIVERSITY BUILDINGS & THEIR UTILITY

SNo	Name of Building	Utility	Built Area (Sq.Mts)
1	Administrative Building, V.C & Registrar Chambers (old)	Police Out Post, BSNL Control Room & Electrical Staff	310.94
2	Engineering Department	Engineering Department office	308.69
3	Science Block (Old)	Chemistry & Geology Departments	1189.64
4	Arts Block (Old)	MCA & Animal House	975.91
5	Men's Hostel (Old)	Physical Education Department & University Web Site Office.	1200.59
6	Women's Hostel(Old) Temporary Sheds	Mushroom Culture Lab.	499.38
7	Class Rooms (Old) Aero can Sheds -1	Physical Education Department Class Rooms, Gym and lab	732.59
8	Aero can Sheds -2	Fine Arts Lab	261.30
9	Aero can Sheds -3	Class rooms	473.06
10	Canteen	University Canteen	228.81
11	Library (Old)	Post office, Women's Cell, Transport Department & Students Competitive Examinations Reading Room.	392.99

12	Sir. C.V.Raman Science Block	Faculty rooms, Research labs, Class rooms, Labs for All Science Departments.	14104.52
13	Guest House	Accommodation of Guests	4112.12
14	Hostels (Boys & Girls)-8 Nos	Accommodation of Women's & men's Students.	16200.67
15	Dinning & Mess Blocks - 4 Nos	Buildings used for Cooking, Serving and eating meals for Students Community.	1633.20
16	Central Library	Students, research scholars and teachers use in its calm, comforting and serene atmosphere and Principal office, IQAC department, Directorate of Admissions, State Bank of India Branch, IT & Networking Centre, PRO office and Centralized Examination Centre.	5979.46

1.6 SYNOPSIS

Energy Management - Solar Power Plant at the roof top of capacity 450 KW was installed in the campus. This serves as renewable energy source for the campus energy requirement. On the other hand majority of the students use public transport i.e., RTC bus mode of transport thus creating less carbon footprint. Still few vehicles movement is found in the campus due to own vehicles used by faculty, students and visitors.

Water Management - Judicial usage of water is being maintained by the university administration and instructions were also given to the students. Soak pits are dug in the campus for ground water recharge. RO plants are used for the drinking water requirement and bore water is used for other uses.

Waste Management - Waste segregation at the source being practiced by every department in the campus. Though the wet waste segregation is being done and sent to compost units, there is a need to streamline the waste management for effective usage of the wet and dry waste. The bins are placed as per the requirement. Dry waste management need to be established for effect implementation.

Students Awareness Campaigns - Various campaign activities are being initiated by university and run by the students. Activities based on water and energy conservation are being done in the premises which is evident by the display boards and stickers on good practices in the required places of every building. Usually NSS and Nature club students prepare their activities and conduct for mass awareness in and around the campus.

Infrastructure - Apart from the buildings and other facilities, university administration has taken up eco-friendly initiatives like

- Installation of Solar Power Plant to reduce the usage of energy from non-renewable source,
- RO Plant for safe drinking water
- Rainwater harvesting pits for ground water recharge
- Compost unit for wet waste management

1.7 RECOMMENDATIONS

- Overall Environmental plan for strategic implementation of eco-friendly practices are to be framed every year. This helps to streamline the existing good practices that are already being implemented. This also enhances the scope of environmental activities for students. Strict implementation of the plan also brings behavioural change amongst the students' fraternity.
- Every year the environment auditing has to be done because it evaluates the outcomes of the environmental strategic plan. This helps the university to implement activities that results in the cost reduction, increase the saving potential, improve the efficiency and finally conserve the available natural resources.

Energy Management

- Electric Sub Meters has to be installed for every building in the campus to analysis and understand the consumption patterns of each building.

- Continuous monitoring of the electricity usage with the help of student team and operation maintenance in charge on the solar rooftop that has been installed on some of the building and also the solar plant that is set up within the university campus, which would give an understanding on the energy usage and that would reduce the energy consumption through proper maintenance and judicial use of electricity.
- The old equipment's like computers, printers, fans and other electrical and electronic appliances are to be either repaired, maintained or retrofit to improve the efficiency and reduce overall energy consumption.
- Vehicle pooling can be encouraged involving both students and the faculty as a green initiative within and outside the campus through proper awareness. Initially this can be declared by the management or through student groups on particular days.

Water Management

- Rainwater harvesting structures are recently set up. But there is a high scope for involving students in the conservation of water for the entire campus so that they also learn the upgraded technology and good water conservation practices.
- Waste water from laboratories and canteens are to be used for garden only after proper treatment. Sewage treatment facility has to be set up for treating sewage water in the campus.
- There is a need to repair leaking taps and pipes at regular intervals to conserve water in the campus.

Waste Management

- Swachh Survekshan of Swachh Bharat Mission is also now giving wider scope for the involvement of the college students and general public in large. So university can take part in their programmes.
- University campus can be declared as plastic free zone. Usage of single use plastic has to be banned completely from the campus especially plastic carry bags, glasses, cups, thermacole cups/ plates and Styrofoam plates etc.

- Further efficient ways of decentralized composting methods can be implemented to minimize the usage of fertilizers.
- There should be a system for better management of hazardous waste generated from the labs.

Students Involvement

- Environmental education should be part of curriculum and activities through multi-disciplinary approach and students should be continuously involved in the environmental activities being organized in the campus.
- Students are to be guided from awareness to action-oriented campaigns assess their own behavioural change and further outreach to the community at large.
- More number of display board are to be set up on various conservation aspects. Students and faculty are to be trained on carbon footprint calculator to reduce their personal carbon emissions.

CHAPTER - 2
ENERGY MANAGEMENT

2.1. INTRODUCTION

Energy audit would give a positive orientation to the energy cost reduction, preventive maintenance and quality control programmes which are vital production and utility activities. It will help to understand more about the ways energy utilized and help in identifying the areas where waste can occur and where scope for improvement exists.

Energy audit helps in energy cost optimization, pollution control, safety aspects and suggests the methods to improve the operating and maintenance practices of a campus. It is instrumental in coping with the situation of variation in energy cost availability, reliability of energy supply decision on appropriate energy mix, decision on using improved energy conservation equipment, instrumentations and technology. It is proven that energy saving about 15 to 30% is possible by optimizing use of energy efficient equipment at the time of replacements.

University has come up with energy efficient technologies like installation of Solar Power Plant and usage of LED Bulbs. They also have range of eco-friendly activities involving students of NSS and NGC.

Objectives

The main objectives of conducting energy audit are as follows:

- To study the present pattern of energy consumption
- To identify potential areas for energy optimization
- To recommend energy conservation practices with cost benefit analysis

2.2. ENERGY SOURCE & UTILIZATION WITHIN THE CAMPUS

Institute uses energy from:

- Electricity from APSSDC
- Solar Power Plant

Energy Flow Map

Energy Consumption

S.No	Item	Value
1	Connected Load (kW) or Contract Demand (kVA)	500KVA
2	Peak Demand or Maximum Demand Indicated (MDI) (kW)	344.60(April-2017)
3	Installed capacity: DG/ GG Sets (kVA or kW)	400KVA
4	Annual Electricity Consumption, purchased from Utilities (kWh)	1383737.6
5	Annual Electricity Consumption, through Diesel Generating (DG)/Gas Generating (GG) Set (s) (kWh)	138374.4
6	Total Annual Electricity Consumption, Utilities + DG/GG Sets (kWh)	1522112
7	Annual Electricity Cost, purchased from Utilities (Rs.)	12243138.74
8	Annual Electricity Cost generated through DG/GG Sets (Rs.)	118500(1500ltsx79) Approximate Value
9	Total Annual Electricity Cost, Utilities + DG/GG Sets (Rs.)	12361638.74
10	What is power factor (less than 1, 1 or above 1)	<1
11	Fans/Air Conditioners	2023
a	No. of fans	2023
b	Air Conditioners	175
c	Conditioned area	29070 Sq.ft
d	Non Conditioned area	508926 Sq.ft
12	Working hours (e.g. day working /24 hour working)	8
13	Working days/week (e.g. 5/6/7 days per week)	6
14	Installed capacity of Air Conditioning System	300.70 TR
a	Centralized AC Plant (TR)	NA
b	Packaged ACs (TR)	NA
c	Window (TR)	07
d	Split ACs (TR)	168
e	Total AC Load (TR)	300.70TR
15	Installed lighting load (kW)	175kW
16	Whether sub-metering of electricity consumption for Air Conditioning, Lighting, Plug Loads, etc. done: Yes/No	No
17	HSD (or any other fuel oil used, specify)/Gas Consumption in DG/GG Sets (liters/cu. meters) in the year	1500 Lts (Approximate value)

18	Fuel (e.g FO, LDO, LPG, NG) consumption for generating steam/water heating in the year (in appropriate units)	Nil
19	Have you implemented a Building Management System (BMS)? (Yes/No)	No
a	Make and year of installation of the BMS	Nil
b	Number of sensors / VRVs in the BMS	Nil
20	Any other appliances - Coffee machines/Office machinery, etc.,	Nil
21	Renewable Energy Sources- Solar Equipment's	Solar
a	Does your college have solar equipment	Yes
b	Capacity (KWH) of the solar equipment	950kW
c	No. of Solar water heaters	Nil
d	Capacity of the heaters	Nil
22	No. of street lights in the campus	167
a	Connected to electricity within the campus	Yes
b	Connected to electricity outside the campus	Yes
23	No. of Gas cylinders used in a month	55
24	Weight of the gas cylinders (14.5 or 17.5) any other specific weight	19Kg's

Lab Equipment's

About 470 varieties of equipment are used in various labs of the university. Voltage ranging from 200 to 250 and having various watts. The equipment usage time period of these equipment is ranging from minimum 10 mins to 24 hrs. All the equipment run with solar power. Especially, Sir CV Raman Building has solar panels, where most of the labs located and high consumption of energy takes place.

University Buildings Lighting facilities

Sl. No	Type of lighting	Wattage	No. of fittings	No. of hours in a day	Total no. of days (usage)	Total wattage
1	Fluorescent tube lights(FTL)	36	3545	8	26	127620
2	Compact fluorescent light(CFL)	18	1051	8	26	18918
3	LED	20	791	8	26	15820
4	LED	50	17	8	26	850
5	LED	60	1	8	26	60
6	LED	200	1	8	26	200
7	False Ceiling 2X2	80	127	8	26	10160

Electronic Appliances Information

The following are the electrical appliances university use regularly for various purposes:

SNo	Equipment	Wattage	Nos	No. of hours per day	Total no. of day (usage) in a month
1	Refrigerators	250/Each	40	24	30
2	Computers	250 / Each	140	8	26
3	Desktops	250/ Each	323	8	26
4	Laptops	50 / Each	120	5	26
5	Servers	800 /Each	2	24	30
6	Small printers	840/ Each	101	8Hrs	26
7	Printers/ Xerox	1750 / Each	21	8Hrs	26
8	Fax machine	30 /Each	2	10 mins	20
9	Scanners	10 / Each	10	10 mins	20
10	Projector	800 / Each	30	1Hr	7
11	Sound System	110 /Each	9	10Mins	1
12	Televisions	80 / Each	7	8Hrs	26
13	Air Coolers	230 / Each	15	1Hr	1
14	Kettles	1000 /Each	30	10Mins	26
15	Iron Boxes	1100 / Each	150	30Mins	26
16	Grinders	750 /Each	4	4Hrs	30
17	Water filters	25 /Each	6	1Hr	26
18	Water heaters (Immersion Rods)	4000/Each	50	15Mins	30
19	Any other(UPS)	10 KVA/Each 6 KVA/Each	4 18	10Hrs	30
20	R.O. Plant	3000 / Each	9	2	26

Total Annual Electricity Consumption, Utilities + DG/GG Sets (kWh)

	Nov '19	Dec '19	Jan '20	Feb '20	Mar '20
KWH	122942.8	114199.2	141270.6	152478.00	141551.20
Amount Spent	1007787.92	950268.00	1115747.84	1201620.00	1125283.66
Litres	120	110	120	130	115
Amount	9360	8580	9360	10140	8970
	1017147.92	958848.00	1125107.84	1211760.00	1134253.66

	Apr '20	May '20	Jun '20	Jly '20
KWH	131551.2	131551.2	108364.0	114908.00
Amount Spent	937078.66	1033333.66	898153.00	926817.00
Litres	140	130	125	120
Amount	10920	10140	9750	9360
	947998.66	1043473.66	907903.00	936177.00

	Aug'20	Sep'20	Oct'20	Nov'20
KWH	96142.00	65490.00	108874.00	85966.60
Amount Spent	806715.00	610542.00	888200.00	741592.00
Litres	110	100	90	100
Amount	8580	7800	7020	780
	815295.00	618342.00	895220.00	749392.00

Pumps and their capacities

Type of pump	Horse Power	Average number of units consumed to fill the overhead tank or sump fully	Average number of hours operated per day to fill the tank with full capacity
Mono Block	39HP	29.09	6 Hrs
Submersible	127HP	94.74	10 Hrs

2.3. SOLAR POWER PLANT (RENEWABLE ENERGY SOURCE)

University has come up with Solar Plant to meet the total energy demand and make it "Green Campus" in partnership with DISCOM. This is on net metering basis. DISCOM has introduced the scheme of "Solar Net Metering" for those consumers

who intend to encourage solar green energy and setup solar PV plants on rooftops of Households, waste lands, buildings of individual households, industries, offices, institutions, residential complexes etc. In view of this DISCOM has provided grid connectivity / necessary permissions to connect rooftop solar power plant and supply solar energy into the distribution network of DISCOM.

Through this net metering facility University is generating solar power for self-consumption and feeding excess power into the DISCOM network. It records net energy between export of generated energy and import of DISCOM energy on every monthly billing. Alternatively, the meter having feature of recording both the import and export values, besides other parameters notified by CEA metering regulations and APTRANSCO / DISCOM procedures in vogue, is also allowed for arriving net energy for the billing period.

University is paying for the net energy in a billing month as per applicable retail supply tariff decided by regulatory commission of the concerned DISCOM, if the supplied energy by the DISCOM is more than the injected energy by the solar PV sources of the university. Any excess/ surplus energy injected in to DISCOM network in a billing month is being paid at APERC pooled cost that is year on year basis. Energy settlement is done in half yearly basis.

PPA agreement was signed between M/s SWelect Energy Systems Limited, Sri Yogi Vemana University and NREDCAP. As per agreement the agency has invested in the project and power is being delivered at a tariff of Rs. 6.40 per unit. In this project NREDCAP has extended 20% subsidy. This plant was setup in 4 acres land beside the university buildings in the year December 2017. The Swelect has agreed to install the plant and do operational and maintenance for next 25 years. The payments will be processed by Yogi Vemana University.

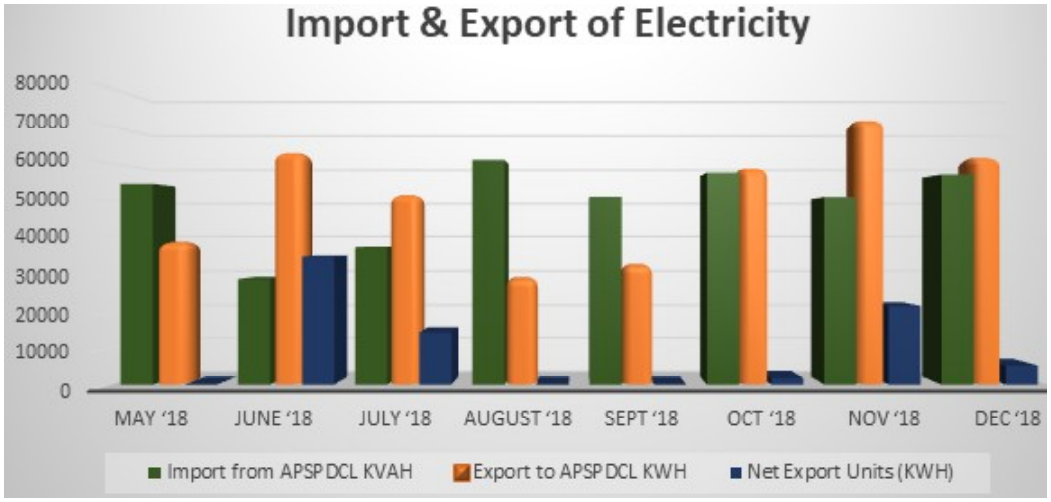
In the entire process the area beside the campus allotted for the proposed plant earlier had plants that are planted under Social Forestry scheme. These plants were removed and replaced in other area.

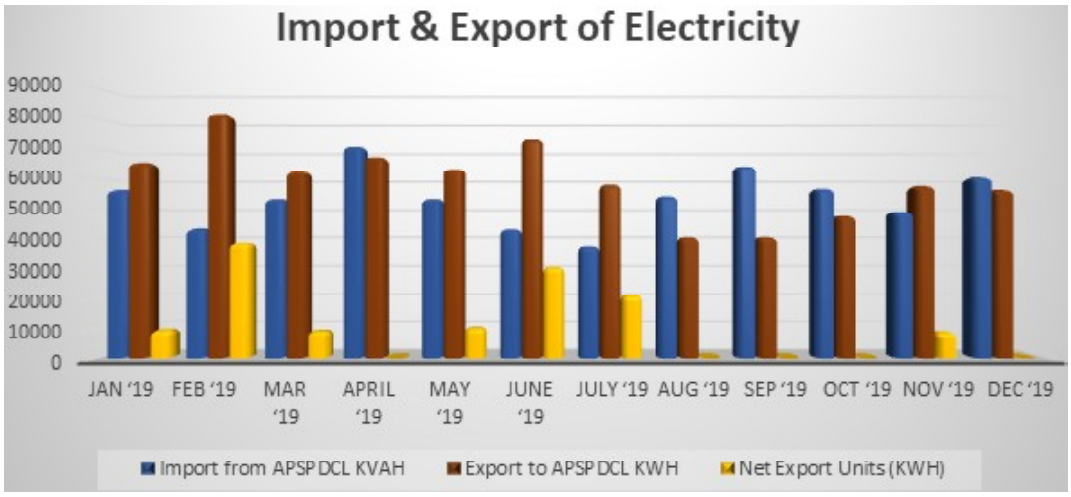
Total 950 KW (4 units per KW)		
1.	Rooftop	
•	Admin	50 KW
•	Library	100 KW
•	Sir CV Raman Building	100 KW
2.	Ground Mounted	700 KW
•	Total number of inverters	19 (each inverter storage is 50 KW
Peek Timing for generation of power		9.30 am to 3.30 pm

Solar Power Plant and Solar Panels installed on the University Buildings.

University Solar Rooftop Net Metering Service

SNo	Billing Month	Import from APSPDCL KVAH	Export to APSPDCL KWH	Claim for Net Export Units (KWH)	Rate	Net Amount (Rs)
1	May ‘18	54480	38715	0	5.90	0.00
2	June ‘18	28815	63480	34665	5.90	204523.50
3	July ‘18	37177.5	51825	14647.5	5.90	86420.25
4	August ‘18	60952.5	29197.5	0	5.90	0.00
5	Sept ‘18	50955	32707.5	0	5.90	0.00
6	Oct ‘18	57510	59190	1680	5.90	9912.00
7	Nov ‘18	50850	72397.5	21547.5	5.90	127130.25
8	Dec ‘18	57030	62175	5145	5.90	30355.50
9	Jan ‘19	56730	66105	9375	5.90	55312.50
10	Feb ‘19	43425	82125	38700	3.741	144776.70
11	Mar ‘19	53820	62970	9150	3.741	34230.15
12	April ‘19	71580	68085	0	3.741	0.00
13	May ‘19	53812.5	63960	10147.5	3.741	37961.75
14	June ‘19	43305	74055	30750	3.741	115035.75
15	July ‘19	37575	58650	21075	3.741	78841.58
16	Aug ‘19	54727.5	40575	0	3.741	0.00
17	Sep ‘19	64957.5	40650	0	3.741	0.00
18	Oct ‘19	57202.5	47842.5	0	3.741	0.00
19	Nov ‘19	49395	58065	8670	3.741	32434.47
20	Dec ‘19	60952.5	56782.5	0	3.741	0.00
21	Jan ‘20	57135	55627.5	0	3.741	0.00
22	Feb ‘20	47872.5	68167.5	20295	3.741	75923.60
23	Mar ‘20	53287.5	66570	13282.5	3.741	49689.83
24	April ‘20	53737.5	71512.5	17775	3.741	66496.28
25	May ‘20	35348	88350	53002	3.741	198280.48
26	June ‘20	46508	74085	27577	3.741	103165.56
		13339141	1553865	214724		1450490.18


Import & Export of Electricity
80000
70000
60000
50000
40000
30000
20000
10000
0
MAY '18
JUNE '18
JULY '18
AUGUST '18
SEPT '18
OCT '18
NOV '18
DEC '18
Import from APSPDCL KVAH
Export to APSPDCL KWH
Net Export Units (KWH)


Import & Export of Electricity
90000
80000
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JAN '19
FEB '19
MAR '19
APRIL '19
MAY '19
JUNE '19
JULY '19
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SEP '19
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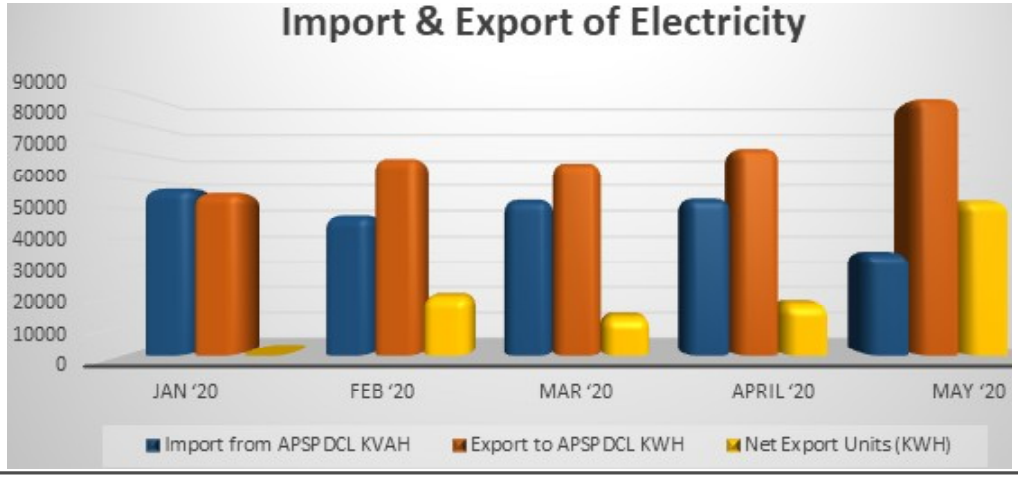
NOV '19
DEC '19
Import from APSPDCL KVAH
Export to APSPDCL KWH
Net Export Units (KWH)


Import & Export of Electricity
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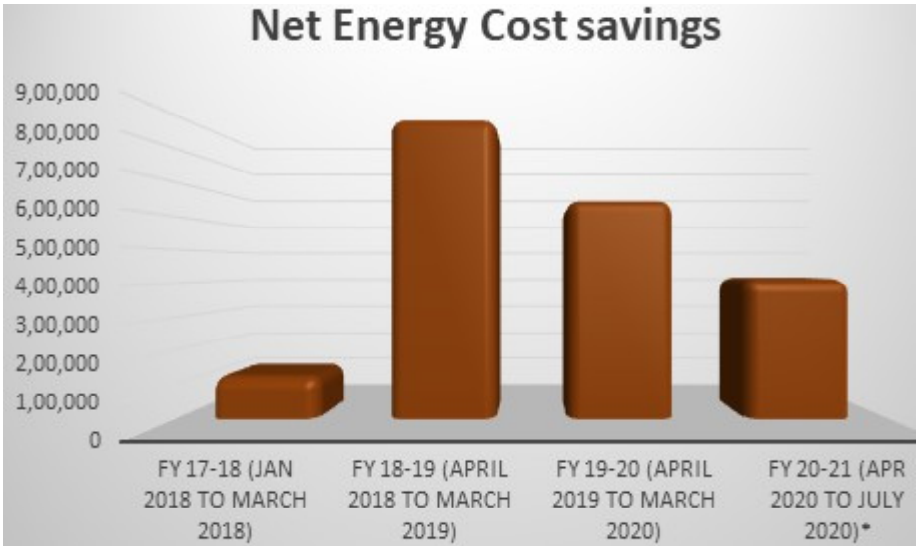
JAN '20
FEB '20
MAR '20
APRIL '20
MAY '20
Import from APSPDCL KVAH
Export to APSPDCL KWH
Net Export Units (KWH)

Energy Savings

Period	Net Energy Cost savings, Rs.
FY 17-18 (Jan 2018 to March 2018)	1,22,850
FY 18-19 (April 2018 to March 2019)	8,94,108
FY 19-20 (April 2019 to March 2020)	6,49,200
FY 20-21 (Apr 2020 to July 2020)*	4,12,047
Total	**20,78,205**



SDG Goals

With the usage of renewable energy for energy needs of the campus it also fulfills the Sustainable Development Goals i.e., Goal 7 and Goal 12.

2.4. TRANSPORTATION

The college transportation is available (one Swaraj Mazda 25 Seater) for the university. Students and other people visiting the university campus travel by bus. Few regular faculty, other staff and students use cars, bikes and bicycles etc. These vehicle floating is about 20 to 25% of the total floating population. Hence it is observed that the campus is energy efficient and create very less air pollution. University campus has greenery that would minimize the air pollution and also to do carbon sequestration.

2.5. OBSERVATIONS

- Overall electricity consumption meters are connected to single meter. So, building wise utilization is not clear. Total energy consumption is met by Solar, Electricity and Generators etc.
- University provides transport facility to staff and for the logistic convenience of the students, University has entered into an MoU with APS RTC under which one bus is operated both in the morning and evening. The students also use public transport i.e., RTC buses. Few staff and students use own vehicles like cars, bikes and bicycles etc.
- The lab equipment used and other general utility electrical and electronic equipment's are run by both solar and electricity as per the net metering. But it was found that few lab equipment's are under repair and not in use.

RECOMMENDATIONS

- Electric Meters has to be installed for every building in the campus to analysis and understand the consumption patterns of each building.
- Continuous monitoring of the electricity usage with the help of student team and operation maintenance in charge on the solar rooftop that has been installed on some of the building and also the solar plant that is set up within the university campus, which would give an understanding on the energy usage and that would reduce the energy consumption through proper maintenance and judicial use of electricity.
- The old equipment's like computers, printers, fans and other electrical and electronic appliances are to be either repaired, maintained or retrofit to improve the efficiency and reduce overall energy consumption.
- Vehicle pooling can be encouraged involving both students and the faculty as a green initiative within and outside the campus through proper awareness. Initially this can be declared by the management or through student groups on particular days.

CHAPTER - 3
WATER MANAGEMENT

3.1. INTRODUCTION

Virtually everything we do or use each day involves water. Yet, we do not give it the importance that is due to it. India will soon be a water-stressed country and we all need to work towards our water security. As our populations continue to grow and shift, the availability of quality water resources is in decline. Pollution, climate change and construction of cities in dry regions are some of the factors exacerbating evolving supply/ demand imbalances. To account this, it is essential that man utilize existing water resources in the most careful, efficient manner. Water audits provide a rational, scientific framework that categorizes all water use. It is a tool to overcome drought related problem, shortage, leakages and losses.

Simple actions can be adopted to reduce the wastage of water and use it wisely. Water audit is a qualitative and quantitative analysis of water consumption to identify means of Reducing, Reusing and Recycling of water. Water consumption patterns are to be identified and problems are to be fixed like leaks & overflow, identify the points where water loss is observed, identify the solutions, assign the responsibility for implementation, prepare a monitoring schedule and assign a person for monitoring.

Water auditing is conducted for the evaluation of facilities of raw water intake and determining the activities for water treatment and reuse. The relevant method that can be adopted and implemented to balance the demand and supply of water. It is therefore essential that any environmentally responsible institution examine its water use practices.

Sources of water

The water source is borewell. The campus has overhead tanks for each building along with bore well. For drinking water RO plants is set up in the campus.

Water Map

The water source map of the campus is as follows:

3.2 WATER CONSUMPTION DETAILS

Name of the building	Total unpaved area (Sq.mts)	Total paved surface (sq. mts)	Total area of rooftop (Sq.mts)	Water Storage (Tanks)	Sump Capacity	RO Plant capacity in litres	Regular Visiting Population	Floating Populatio
Aerocon Shed 2	360	350	261.3	1000	0	0	169	160
Aerocon Shed 3	250	310	473.06	1000	0	0	86	40
Class Room (Old) Aerocon Shed 1	410	350	732.59	1000	0	0	10	0
Arts & Commerce Building	1800	2520	12991.9	16000	0	10,000	768	40
Arts Block (Old)	395	448	975.91	1000	0	0	125	15

CV Raman Science Building	1590	2498	14104.5	34,000	40,000	1000	921	40
Canteen (Temporary Shed)	220	312	228.81	2000	40,000	0	511	30
Central Library	288.69	1200	5979.46	9000	40,000	500	1734	100
Dining & Mess Blocks (4 Nos)	250	290	1633	40,000	2000	500	1300	0
Engineering Department	280.5	160	308.69	0	1000	--	50	0
Examination Center	550	320	3355.74	0	40,000	500	200	50
Guest House	670	315	4112.12	2000	0		30	0
Arts & Commerce (Gurukulam Building)	1800	2520	12991.9	2000	0	1000	200	0
Hostels (Boys & Girls) 8 Nos	2240	2459	16200.7	0	360000	3000	1138	35
Library (Old)	330	140	392.99	0	40,000	0	20	200
Men's Hostel (Old) M.PEd	395	378	1200.59	1000	0	500	100	10
Administrative Building, VC & Registrar Chambers	300	175	310.94	1000	0	500	150	50
Science Block (Old)	384	448	1189.64	500	0	0	30	0
Women's Hostel (Old)	550	630	499.38	3000	0	1000	650	0
	13063.19	15823	77943.15	114500	563000	18500	8379	890

Water used for campus needs are from borewells. This indicates two aspects; one is drawing water from ground water and other is recharging water into the ground. The following are details:

Total unpaved area (Sq.mts)	13063.19
Total paved surface (sq. mts)	15823
Total area of rooftop (Sq.mts)	77943.15
Water Storage (Tanks)	114500
Sump Capacity	563000
RO Plant Water Utilization	18500
Regular Visiting Population	8379
Floating Population	890
Total People visiting	8962
Total per capita consumption of hostels (Litres)	101
Total per capita consumption for other buildings	45
Total water used for entire Landscape s(includes drip, direct and irrigation from sumps (Litres)	1,20,000 to 1,50,000
Total waster wasted (through leakages & broken pipes, toilets, and other area etc. (Litres)	3777.66

Type	Per capita Consumption	Consumption per day	water wastage per day
Hostels	101	128977	102181.6
Other Buildings	45	359640	287712
		488617	389893.6

3.3. RAINWATER HARVESTING

To conserve water, minimize wastage & to ensure its more equitable distribution both across and within the states through integrated water resource development and management. Promotion of citizen and state actions for water conservation, augmentation and preservation is one of the goals of the campus.

Through NWM's campaign "Catch the Rain", university is intending to catch the rain water. This campaign is to nudge all stake-holders to create Rain water Harvesting Structures (RWHS) suitable to the climate conditions and sub-soil strata. It drives to make water harvesting pits, rooftop RWHS, check dams etc, removal of encroachments and de-silting of tanks to increase their storage capacity, removal of obstructions in the channels which bring water to them from the catchment areas etc, repairs to step-wells and using defunct bore-wells to put the water back to aquifers

etc, are some of the activities suggested to be taken up with people's active participation under this campaign.

Considering the average annual rainfall of the YSR Kadapa District 710 mm, which ranges from nil rainfall in January to 137 mm in October. October is the wettest month of the year. On the other hand the campus soil in alkaline and have shortage of water. In view of this, university has constructed about 100 soak pits & trenches and 100 farm ponds that are made to catch the rainwater through the campaign. And also constructed 15 Rainwater harvesting Structures near the building.

Rain Water Harvest Units

University has about 15 rain water harvesting structure of size 2.0 m x 1.5 m x 2.0 m including earth work excavation of filling of 40 mm size HBG metal up to 50% of volume, filling is of 20 mm size 15% of column. construction of side walls is brickmasonry in CM (1:6) 230 mm thick and 450 mm height, plastering the side walls in (1:6) 16 mm thick base coat and top coat of 4 mm thick with dubara sponge tinish, coir mat to avoid spillage.

The potential scope of harvesting water from all the rooftop areas of the buildings within the campus

Total rooftop area (sq.mts)	**77493**
The amount of rain water that can harvested from the rooftop per 1000 sft is	30,000
Potential water harvest per year	2,09,23,110
Average water consumption on working days (230 days)	14,68,81,910
Average consumption for landscape on non working days (135 days)	1,62,00,000
Total Water required	16,30,81,910

2,80,59,480 litres of water can be harvested through rooftop of the total buildings. Considering Kadapa region the rainwater harvested per 1000 sft is 30,000 litres. Whereas campus required 16,30,81,910 litres per year.

3.4. WATER QUALITY

Building	pH	TDS
CV Raman Science Block	7.1	028
Girls Hostel (Junior)	7.8	019
Girls Hostel (Seniors)	7.2	031
Library Block	7.4	045
Boys Hostel (Juniors)	7.1	028
Boys Hostel (Seniors)	7.6	035
VC Block	7.0	014
Guest House	7.4	023
Arts Block	7.2	06

Building	Heterotrophic Bacterial Count	
	0.1 ml	1 ml
CV Raman Science Block	4	23
Girls Hostel (Junior)	10	41
Girls Hostel (Seniors)	7	29
Library Block	9	32
Boys Hostel (Juniors)	8	26
Boys Hostel (Seniors)	5	40
VC Block	Nil	Nil
Guest House	8	32
Arts Block	5	27

Building	Colour	Odour	Taste	Turbidity
CV Raman Science Block	Normal	Agreeable	Agreeable	Nil
Girls Hostel (Junior)	Normal	Agreeable	Agreeable	Nil
Girls Hostel (Seniors)	Normal	Agreeable	Agreeable	Nil
Library Block	Normal	Agreeable	Agreeable	Nil
Boys Hostel (Juniors)	Normal	Agreeable	Agreeable	Nil
Boys Hostel (Seniors)	Normal	Agreeable	Agreeable	Nil
VC Block	Normal	Agreeable	Agreeable	Nil
Guest House	Normal	Agreeable	Agreeable	Nil
Arts Block	Normal	Agreeable	Agreeable	Nil

Correlations		PH	EC	BOD	COD	TDS	TSS	Chloride	Phosphates	Nitrates
PH	Pearson Correlation	1.000	-.015	.009	.012	.319	-.170	.293	-.352	-.278
	Sig. (2-tailed)	.	967	981	973	370	638	412	319	437
	N	10	10	10	10	10	10	10	10	10
EC	Pearson Correlation	-0.015	1.000	.367	.502	-.314	.585	-.187	-.012	-.217
	Sig. (2-tailed)	.967	.	.297	.139	.373	.076	.604	.974	.546
	N	10	10	10	10	10	10	10	10	10
BOD	Pearson Correlation	.009	.367	1.000	.088	-.316	.553	.566	.063	.104
	Sig. (2-tailed)	.981	.297	.	.808	.373	.098	.088	.864	.774
	N	10	10	10	10	10	10	10	10	10
COD	Pearson Correlation	.012	.502	.088	1.000	.485	-.632	-.056	.016	-.624
	Sig. (2-tailed)	.973	.139	.808	.	.155	.050	.878	.964	.054
	N	10	10	10	10	10	10	10	10	10

TDS	Pearson Correlation	.319	-.314	-.316	.485	1.000	.103	.223	.018	-.327
	Sig. (2-tailed)	.370	.378	.378	.155	.	.777	.535	.961	.356
	N	10	10	10	10	10	10	10	10	10
TSS	Pearson Correlation	-.170	.585	.553	.632	.103	1.000	.273	.541	-.416
	Sig. (2-tailed)	.638	.076	.076	.050	.777	.	.446	.106	.232
	N	10	10	10	10	10	10	10	10	10
Chlorides	Pearson Correlation	.293	-.187	-.187	-.056	.223	.273	1.000	.062	.005
	Sig. (2-tailed)	.412	.604	.604	.878	.535	.446	.	.866	.988
	N	10	10	10	10	10	10	10	10	10
Phosphates	Pearson Correlation	-.352	-.012	-.012	.016	.018	.541	.062	1.000	-.273
	Sig. (2-tailed)	.319	.974	.974	.964	.961	.106	.866	.	.446
	N	10	10	10	10	10	10	10	10	10
Nitrates	Pearson Correlation	-.217	-.217	-.217	-.624	-.327	-.416	.005	-.273	1.000
	Sig. (2-tailed)	.437	.546	.546	.054	.356	.232	.988	.446	.
	N	10	10	10	10	10	10	10	10	10

S.No	pH	EC (S/cm)	BOD mg/l	COD mg/l	TDS mg/l	TSS mg/l	Chlorides mg/l	Phosphates mg/l	Nitrates mg/l
Sample -1	7.5	2.42	280	816	4652	130	1780	7.75	247
Sample -2	8.1	5.40	200	1490	2364	250	950	8.66	156
Sample -3	7.3	3.12	429	1215	3876	378	2750	9.65	142
Sample - 4	8.3	3.65	225	2260	7072	290	1540	7.43	123
Sample – 5	8.2	6.31	500	2548	4312	650	2167	8.89	178
Sample – 6	7.2	3.94	330	1696	2260	340	1020	8.97	192
Sample – 7	8.4	3.51	230	2352	8090	430	1575	10.45	147
Sample – 8	7.8	4.13	345	1345	3428	463	1245	10.65	150
Sample – 9	7.03	3.52	280	580	3980	290	1800	9.45	230
Sample – 10	7.15	4.59	430	1349	3618	260	1548	7.89	200
WHO	**6-9**	**2-3**	**50**	**150**	**1200**	**100**	**20**	**10**	**9**
Mean	8.79	4.059	324.9	1565.1	4365.2	348.1	1637.5	8,979	176.5
S.D.	1.1301	1.130	100.879	653.21	1872.2	142.874	536.88	1.097	40.376

From the above tables, it is observed that the pH of the sample was ranged between 7.2 to 10.5 which denoted that the collected sample were alkaline and the temperature was at 28 to 37°C. Electrical conductivity showed minimum 2.42 to 6.31 values toxic to plants and micro organisms due high salt concentration, the total suspended solids of the effluents were observed at range of 130 to 650 mg/l. Total dissolved solids are recorded high 800 mg/l. The high range of TSS and TDS effects on growth and metabolism of plants and micro-organisms due to lack of soil permeability and aeration. There was a high load of BOD (500 mg/l) and indicated low or zero levels of oxygen available. Biochemical Oxygen Demand and chemical oxygen demand showed high value 254 mg/l which implies the toxicity by chemicals. This indicated that the dissolved oxygen of the effluents was depleted due to cause of chemical pollution. The analysis of the effluents for phosphates, nitrates, sulphates showed 10.65, 1.2 and 247 mg/l respectively. There is a marked high range of

phosphates, nitrates and sulphates these values showed more than the permissible range of WHO because of dye contamination, the chloride extent was found to be 2167 mg/l and very high range was recorded by textile effluents.

Statistical analysis of the above parameter fluctuations, their range increases from minimum to maximum due to uncertainty association. A significant correlation was observed in between at 95% level. There is a negative correlation were recorded in between pH to EC, -.015, TSS -0.170, phosphates -0.352 and nitrates -0.278. Other parameter showed positive significance value between BOD (0.981), COD (0.973) and less correlation was recorded with TDS (0.319). Similarly EC showed negative correlation with pH(-0.015), TDS (-0.014), Chlorides (-0.187), phosphates (-0.012) and nitrates (-0.217). The correlation studies of the BOD with other physic-chemical parameter test. Except TDS (-0.316) other parameter recorded with positive significant values ranged from 50% to 100% (P?0.05) while in case of COD except chlorides (-0.056) and nitrates (-0.624) remaining parameter were statistically significant. TDS showed significant with EC (-0.314), BOD (-0.316) and nitrates (-0.327), recorded as negative correlation other parameter were bound with significant range. The fluctuations were found between TSS to pH (-0.170) and TSS to nitrates (-0.416), whereas with chlorides, EC (-0.187), COD (-0.056) were recorded with negative correlations.

The eutrophication parameters of phosphates and nitrates and their significance were studied. From the present investigation it was confirmed that pH and EC was correlated negatively for both phosphate and nitrate ($P \leq 0.05$), COD (-0.624), TDS(0.327), TSS(-0.416) were showed negatively correlation with nitrates ad also phosphates with nitrates. It was evident that all the physic chemical parameter investigates, among all only few are negatively correlated remain were recorded with $p \geq 0.05$ at 5% significant that is two tailed significance with correlation table.

3.5. OBSERVATION

Real Loss

- On an average 3777.6 Litre of water is wasted due to leakages, broken tapes & pipes and overhead tank etc per day as real loss.
- Since the connections are old and many connection are through underground pipe network, there might be chances for underground leakage that is not visible though surface observation.

Overflow

- Overflow also happening as the pumps are not switched off on time.

Wastage

- Sprinkler System is been used for gardening which is efficient system for watering but due to lack of awareness the Gardner is using the system for more number of hours than the required time.

Good Practices observed

Rain water Harvesting and Ground water Recharge

- Good rainwater harvesting structure has been built in this area. The rain water is harvested through soak pit and water fallen on the paved and unpaved area are channelized to soak pits and farm ponds within the campus.
- farm pond serves as a source of drinking water to animals and birds that live in this area

Sprinkler System

- Sprinkler System is been used for gardening which is efficient system for watering.

3.6. RECOMMENDATION

To control Overflow

- Install Sensors to control the overflow.
- Pumps need to be switched off once the tank is full and the moment overflow is seen.

To control Leakage

- Taps needs to retro fitted as it has become old and are the main source of leakage.

- Worn out connections needs to be replaced.
- Monitoring should be done to find out leakages.

Proper Maintenance of RWH

- Rain water harvesting structures are to channelized to borewell so that the water directly recharges the bore well. Excess rain water from the sumps has to be directed to the borewells for the direct recharge which also avoids evaporation.
- Farm pond is to be maintained properly, so that they won't become the breeding ground for mosquitoes.

For Optimum usage of water

- Awareness needs to be created to conserve the water and for optimum water usage.
- Posters, Pictures and Images can be displayed to create awareness among the inmates of the hostel.
- More optimum methods for floor cleaning like using mops and vacuum cleaners to conserve water.

To increase the recharge of ground water

- Recharge Shaft to be constructed to rapidly increase ground water level

To Control Evaporation

- The Rain water harvesting structure can be partially covered to control the Evaporation loss.

Waste Water Treatment

- STP has to be constructed for treating waste waster of the campus and the treated water can be used for landscape and flushing the toilets.

CHAPTER - 4
WASTE MANAGEMENT

4.1 ABOUT WASTE AUDIT

The purpose of the waste audit is to gain a detailed understanding of the types and quantity of material being generated. The recommendations can be used to improve the economic and environmental performance of waste management efforts. For this audit, there is a need to discover what waste are being generated and in these which materials are recyclables. Further the dispose mechanism adopted for both wet and dry waste are to be considered during audit. An effective waste reduction program must be based on current and accurate information on the quantity and composition of the waste stream. Therefore, there should be systematic procedure to review operations and subsequently, waste generation. Performing this exercise will define the composition of your discards by examining how materials enter and exit your facility.

All operations produce waste and there is nothing wrong by recognizing it. However today concern is over waste generation and increasing costs of collection and disposal are good reasons to find out how to reduce, increase recycling and try to cut costs. An audit alone will not reduce your waste. Rather, it is the starting point that will enable your work to make informed decisions on how to allocate resources for source reduction and recycling programs.

In long run this saves money, reduces waste and disposal costs and creates positive environment campus image. This also helps in devising the ways and methods of reducing wastes at the source.

Hazardous Waste - Institute adopts standard operating procedures for safe disposal of hazardous chemicals collected in the chemistry laboratory and other allied departments. The chemicals like acids utilized for experiments are very negligible hazardous chemicals. So the chemicals of through the normal waste in shrinks.

4.2. WASTE CLASSIFICATION & QUANTITY

The waste generated in the campus is majorly of three types i.e., Wet Waste, Dry Waste and Hazardous Waste. The waste generating sources in the campus are:

SNo	Source	Types of Waste	Quantity of waste produced per day
1	Canteen	Vegetable waste & cooked food waste	49 Kgs
2	Hostels	Plastic, paper, cloth, sanitary	150 Kgs
3	Classrooms	Paper and plastic	11 Kgs
4	Labs	Glass, chemicals, iron, paper & plastic	20 Kgs
5	Construction Site	Broken bricks, cement pieces	36 Kgs
6	Garden	Litter	25 Kgs
7	Washrooms	Sanitary waste	15 Kgs
8	Any other areas	Plastic waste	10 Kgs
			316 Kgs

Campus has source segregation mechanism and twin dust bin culture. The dust bins are arranged department wise. Bins available in the campus are:

Type	Nos
Twin bins	78
Small bins	109
Medium size bins	47
Main (big) bins	39

4.3. COLLECTION, STORAGE & DISPOSAL OF WASTE

Wet waste

The wet waste generated from the canteen is being sent to compost unit and also part of it is given to the piggery people from the nearby village. They collect the

food waste and use as feed for the pigs. Therefore, the major part of the wet waste is disposed properly and also reused. The litter of the campus is composted through vermi compost unit. The campus has lot of greenery in various patches and also in and around department buildings. The litter is collected in trollies and send to compost units for composting. The resulted manure is used to the plants and nursery in the campus itself. Especially leaf litter is being composted separately.

Dry Waste

The dry waste like paper, glass, plastic etc from the classrooms, department rooms and labs are stored in separate spaces. But there is no method for their disposal.

University have a mechanism to dispose paper waste of library. The magazines are stored for 2 to 3 years and disposed for recycling through tender process. On the other hand, the books which deteriorate are being sorted and book binding is done for reuse.

E-Waste Management

- Computers and their parts, telephones, printers and other electronic devices will become obsolete or do not function properly after some years and become e-waste. Proper collection and disposal of e-waste is very important as they are mostly made of very dangerous metals like lead, cadmium etc. All the E-Waste like key boards, mother boards, printers etc generated in the college premises as of now is stored in a separate room. Institute has an MoU with Urban Rebox IT Pvt Ltd an authorized agency of ITC, for the safe disposal of E-Waste. They collect the e-waste regularly from the campus.

4.4. OBSERVATIONS & RECOMMENDATIONS

Observations

- Source segregation and separation of dry waste is happening for classrooms, labs, staff rooms, conference halls, administration blocks etc.
- Lab waste disposal mechanism is not found. But, the waste is store in separate space so that it is not mixed with the regular waste.
- There is no mechanism for e-waste and sanitary waste disposal.

Recommendations

- A separate dry resource centre is required for the campus. Especially, for the management of lab waste there need to a specific allotted space with proper handling mechanism.
- The waste generated has to be tied up with the local recyclers as well for better dry waste management to avoid the land pollution as this waste contains majorly the chemicals and glass material.
- There is a need to set up a vending Machine in the college hostels and waiting rooms to collect the used sanitary napkins and dispose scientifically. Presently, campus doesn't have sanitary waste Management mechanism.

4.5. CONCLUSION

- The overall environment of the campus is being safe guarded with various activities. The utilization of the renewable resources is one of the major step taken by the university to use solar energy generated from Solar Power Plant which minimizes the fossil fuel consumption through thermal power plants.
- Rainwater harvesting and farm ponds are major rain water recharge structures available in the campus.

- Apart from the implementation of the above, management has also been very keen on involving students continuously in creating awareness through several activities of NSS and Nature Clubs. Which also makes students to be create a scope for innovation and new ways of sustainable environmental friendly solutions.

- Rating of the campus (range from 1 to 10)

Action	Rating
Energy conservation	8
Waste management	6
Water conservation	6
Eco friendly transport	8
Biodiversity - varieties of flora	10
Biodiversity - varieties of Fauna	10
Carbon neutral	10
Eco Buildings - Architectural Design	9
Landscape - Aesthetically	9
Student behavior - Nature conservation, Protection, Preservation and willing to lead Simple eco-friendly low carbon lifestyles	7
Management behavior - towards Nature conservation, Protection, Preservation and lead a very Simple eco-friendly low carbon lifestyle?	7
Student behavior - Nature conservation, Protection, Preservation, Simple lifestyle	7

CHAPTER - 5
STUDENT ATTITUDE & ENVIRONMENT

5.1. INTRODUCTION

University has been doing lot of awareness programmes to the students and also putting efforts to make them part of their eco-friendly activities as well. So, first step was to setup display like signages, wall paintings and posters etc. on eco-friendly and conservation habits. Faculty and management have been inspiring students and supporting them in generating new ideas and creativity such awareness campaigns. Especially posters have created lots of behavioural change in students and management. The students are voluntarily coming forward and doing various activities in the campus. The university have nature club for students where in students become a part of the environmental activities. This club is run in the leadership of Dr.A.Madhushudan Reddy, Associate Professor, Department of Botany. In this academic year the following days were observed by doing activities:

SNo	Activity Name	Description of the activity	Date	No. of students participated
1	World Forest Day	Awareness rally in the campus on World Forest Day	21 march 2020	425
2	World Water & Sanitation Day	Meeting on World Water & Sanitation Day	22 march 2020	327
3	World Atmosphere Day	Discussion on World Atmosphere Day	10 April 2020	229
4	Earth Day	Rally and seminar on Earth Day	22 April 2020	75 (staff)
5	World Biodiversity Day	Guest lecture on World Biodiversity Day	22 May 2020	125

6	World Environment Day	Released awareness poster and rally on World Environment Day	5 June 2020	328
7	Van Mahotasav Saptah	Plantation in the campus premises	5 July 2020	625
8	World Nature Day	Organised by Nature club and discussed on natural resource World Nature Day	03 October 2020	527
9	World Birds Day	Awareness campaign on World Birds Day with related to local birds	12 November 2020	236
10	World Energy Conservation Day	Discussed on energy conservation in India in view of World Energy Conservation Day	14 November 2020	345

University has won few awards like

1. A.P Green award,
2. Vanam Manam award,
3. Conservation awards

University also conducts a lot of seminars, workshops and conference on various topics. Some of them are as follows:

1. One-day Lecture Workshop on Public Health and Biodiversity-14th February, 2020, at Yogi Vemana University
2. Environmental Awareness Program-2nd October, 2019, at Yogi Vemana University
3. Lecture Workshop on Environmental Resources and Development-17th Sept. 2018, at Yogi Vemana University
4. 5-day Faculty Development Programme on Rural Immersion and Community Engagement Work from 2nd to 6th July, 2019 for NSS POs in association with Mahatma Gandhi National Council of Rural Education

5. JAL SHAKTI ABHIYAN in 2019

6. Awareness on Catch the Rain from 2017 to 2020

7. Organized 65 Awareness on renewable energy Programs 2017-2020

8. SERB, APSCHE & YVU sponsored two-day National Seminar on Insect Biology & Conservation Management - 2017 (IBCM - 17), Department of Zoology, Yogi Vemana University, Kadapa. 14th, 15th March 2017.

9. National seminar cum workshop on Alternatives to animal experiments for life science research at Dept. of Zoology, Yogi Vemana University, Kadapa on 24-25, Feb. 20020.

10. National workshop o Fish diseases and health management in Aquaculture at Dept. of Zoology, Yogi Vemana University, Kadapa on 31st Jan. 2020.

11. One day lecture workshop on public health and biodiversity at Dept. of Envi. Sciences, YVU, Kadapa on 14th Feb. 2020

12. UGC - SERB Sponsored two-day National seminar on "Wildlife Conservation - Endangered Species" organized by Dept of Zoology, Govt. College for Men (Autonomous), Kadapa, A.P. on 20th - 21st January 2017.

5.2. OBSERVATIONS & RECOMMENDATIONS

Observations

- It is observed that most encouraging aspect of these activities are certificates and awards. But around 400 to 500 students who are closely associated with the club are having zeal for working towards ecofriendly campus. University also supports nature club in all aspects.

- Now a days it is very important that every one should know and understand about climate change issues, SDG Goals and biodiversity. Here in this university students are aware of the above and need to have indepth knowledge on how these aspects are linked to our daily life.

- As of now there is no specific campus environment policy framed by the management to make campus Eco friendly and Carbon neutral.

Recommendations

- Environmental education should be part of curriculum and activities through multi disciplinary approach and students should be continuously involved in the environmental activities being organized in the campus.

- Students are to be guided from awareness to action-oriented campaigns assess their own behavioural change and further outreach to the community at large.

- More number of display board are to be set up on various conservation aspects. Students and faculty are to be trained on carbon footprint calculator to reduce their personal carbon emissions.

- Campus Environmental Policy needs to be developed and it should contain youth chapters were students have greater role doing innovative sustainable solutions.

ANNEXURE - 01

Department Wise Equipment Information

Department :Biochemistry

SNo	Name of the Instrument	Wattage/ Volts /Capacity	No. of hours
1	Calorimeter	220v	4
2	Centrifuge	250v	12
3	Refrigerators	250v	24
4	Chromatography chamber	22ov	4
5	Power packs	220v	4
6	Silo mixer	450v	1
7	Weighing Balance electronic	230v	4
8	Stirrer	230v	4
9	Hot Plate	220v	4
10	Water Distiller plant	220v	2
11	PH Meter	12v	2
12	UV Chamber	220v	2

13	Water bath	240v	24 per week
14	Hot Air Oven	220v	4 per week
15	Sonicator	220v	4 hrs per week
16	UV Spectro photometer	240v	2hrs per week
17	Laminar Air Flow Chamber	230v	2hrs per week
18	Ion exchange conductivity	220v	1
19	Autoclave	220v	4hrs per week
20	Stabilizers	230v	4
21	Constant temperature	230v	4
22	Light microscope	NA	4
23	HPLC	220v	2
24	Shaking Water Bottles	220v	12

Department :Biotechnology & Bioinformatics

SNo	Name of the Instrument	Wattage/ Volts /Capacity	No. of hours
1	Gel Rocker	220/230V	1 hrs
2	Cyclo Mixer	220/230V	1 hrs
3	Colony Counter	220/230V	30 mins
4	Kitchen Blends	300V	30 mins
5	Heating Mantle	300V	30 mins
6	-20 °c Freezer	300V	24 hrs
7	Refrigerator	300V	24 hrs
8	Stop Watches	300V	1 hrs
9	SDS PAGE units	300V	3 hrs
10	Agarose Units	300V	3 hrs
11	Paper Chromography	--	3 hrs
12	Power Packs	300V	3 hrs
13	UV – Transilluminator	300V	30 mins
14	Vacuum Pumps	220/230V	3 hrs
15	Hemocytometer	--	30 mins
16	Western Blot units	300V	3 hrs
17	Hot air oven (kemi)	240/250V	2 hrs
18	Water Bath	240/250V	1 hrs
19	Water bath big size (Test Tubes)	240V	1hrs
20	Water bath shaker	240V	1 hrs
21	Homogenizer	300V	30 mins
22	Orbital shaking incubator	240/250V	24 hrs
23	Cooling Centrifuge	220/230V	2 hrs

24	Incubator (Bacteriological)	60V	24 hrs
25	R-8 c Laboratory Centrifuge	220/230V	2 hrs
26	Electronic Balance	220/230V	30 mins
27	Microscope (Binocular)	220/240V	30 mins
28	PH Meter	220/230V	30 mins
29	Autoclave	220/230V	1 hr
30	Laminar air flow	220/230V	1 hr
31	UV. VS Spec	220/230V	1 hr
32	Plate Reader – Birod	220/230V	1 hr
33	Soxlet extraction apparatus	220/230V	1 hr
34	Micro oven	240/250V	30 mins
35	Distillation Units	240/250V	2 hrs
36	TLC Units	220/230V	2 hrs
37	Hot Plate	220/230V	30 mins
38	Spin Win	220/230V	30 mins
39	Magnetic Stirrer	220/230V	1 hr
40	Colorimeter	220/230V	1 hr

Department : Biotechnology & Bioinformatics

S.No	Name of the Instrument	Wattage/ Volts /Capacity	No. of hours
Research Lab			
1	Eppendorf Centrifuge 58/OR (1)	220/230V	1 hr
2	Eppendorf PCR	220/230V	6 hrs
3	Electrophoresis Unit (2)	220/230V	1 hr
4	Laminar airflow Bench	220/230V	1 ½ hrs
5	Freezer (2)	220/230V	24 hrs
6	Refrigerator (2)	220/230V	24 hrs
7	Water Bath	220/230V	2 hrs
8	Ph Meter	220/230V	1 hr
9	Weighing Balance	220/230V	1 hr
10	Micro oven	220/230V	1 hr
11	Bonocular Microscope	220/230V	2 hr
Biotechnology MSc Lab			
12	Refrigerator (2)	220/230V	24 hrs
13	Electrophoresis Unit (2)	220/230V	2 hrs
14	Ph Meter (2)	220/230V	1 hr
15	Water Bath (2)	220/230V	2 hrs
16	Laminar airflow Bench (3)	220/230V	1 ½ hrs
17	Incubators (2)	220/230V	Over night

18	Orbital Shaking Incubator	220/230V	Over night
19	Hot Air Oven (2)	220/230V	1 hr
20	Distillation Units (2)	220/230V	2 hr
21	Weighing Balance (2)	220/230V	1 hr
22	Sonicator	220/230V	30 min
23	Double Beam Spectrophotometer	220/230V	1 hr
24	BOD Incubators	220/230V	1 hr
25	Vortex (2)	220/230V	30 min
26	Colorimeter (3)	220/230V	1 ½ hrs
27	UV Hoods (4)	220/230V	
28	Autoclaves (2)	220/230V	1 hr

Gas Cylinders Usage : 1 per month

Department : Botany

SNo	Name of the Instrument	Wattage/ Volts /Capacity	No. of hours
1	Compound microscope (23)	220/230V	2 hrs
2	Dissection microscope (25)	220/230V	1 hr
3	Laminar airflow (2)	220/230V	2 hrs
4	Orbital Shaking Incubator (2)	220/240V	Over night
5	Incubator (2)	220/230V	Over night
6	(OHP) Overhead projects	210/220V	2 hrs
7	Stero microscope	220/230V	½ hr
8	Torinocular Microscope (1)	230V	2 hrs
9	Laboratory Centrifuge	220/230V	1 hr
10	Binocular microscope (1)	220/230V	2 hrs
11	Microtome	220/230V	1 hr
12	Hot air oven (2)	220/230V	1 hr
13	Analytical balance (1)	220/230V	½ hr
14	Laboratory Centrifuge (1)	220/230V	1 hr
15	Colorimeter (1)	210/220V	1 hr
16	Laminar airflow (1)	220/230V	2 hrs
17	Water Bath	240/250V	1 hr
18	Ul Toransonic homogenizer (1)	220/230V	30 mins
19	Ph Meter (1)	210/220V	30 mins
20	Distilled water unit (1)	230/240V	4 hrs
21	Power packs (4)	210V	½ hr

22	Sub marine gel elctrophorosis units (4)	220/230V	1 hr
23	Sub gel electrophoresis (3)	210/220V	1 hr
24	Water Bath (3)	240/250V	1 hr
25	Weighing mission (3)	220/230V	½ hr
26	Ph Meter (4)	210/220V	½ hr
27	Distilled water unit (2)	230/240V	4 hrs
28	Refrigerator	200/300V	Continuous
29	Magnetic stirrer hot plates (4)	220/210V	1 hr
30	Spinix Vortex Shaker	210/220V	10 mins
31	Spectro photometer	240/230V	½ hr
32	Micro oven	230/240V	10 mins
33	Dancing shaker	210/220V	24 hrs
34	Spinwin centrifuge	220V	
35	Autoclave	220/230V	1 hr
36	Colorimeter	210/220V	
37	SDS phase system	220/230V	1 h r

Department :Agri-Science Park Project

SNo	Name of the Instrument	Wattage/ Volts /Capacity	No. of hours
1	Gel Documentation with PC	Aunki, Libert UPS Servo st 300 V	1 hr
2	Eppendorf master cycler pro (PCR)	200 – 240V vapoproect	5 hrs
3	PCR Systems with gradient palm cycler	240V carbet UPS	5 hrs
4	Real time PCR	240/250V	4 hrs
5	UV Spectra photo meter	220-240V	5 hrs
6	Ultra freezer (-86°c)	230/240V	Over night
7	Pharmaceutical Refrigerator (-4°c)	240/250V	Over night
8	Ice maker	230/240V	Over night
9	Water purification systems	200-240V	6 hrs
10	Stainless steel water baths (2)	230V	6 hrs
11	Refrigerator Circulation water bath	220-230V	4 hrs
12	Orbital shakers (pelican) (2)	170-270V V Guard ST	4 hrs

13	Multiparter	220/230V	Over night
14	Vertical Laminar Air Flow	220/230V	2 hrs
15	Horizontal Laminar Air Flow (2)	220/230V	4 hrs
16	Centrifuge 5424 Model	230V	4 hrs
17	Centrifuge 5415 Model	230V	4 hrs
18	Eppendorf Centrifuge 5810 R Model	230V	4 hrs

Department :Chemistry

SNo	Name of the Instrument	Wattage/ Volts /Capacity	No. of hours
1	UV VIS Double Beam spectro photometer (2)	220 V	2 hrs
2	Rotary evaporator (7)	220 V	1 hr
3	Vacuum pump (2)	220 V	1 hr
4	Analytical balance (3)	220 V	½ hr
5	Catalytic Hydrogenator	220 V	2 hrs
6	Vacuum oven	220 V	1 hr
7	Magnetic stirrers (32)	220 V	1 hr
8	Fume Hood (3)	240 V	2 hrs
9	Sonicator (5)	220 V	2 hrs
10	CH Instruments, USA Electro chemical work station	220 V	1 hr
11	ASL, Japan rotating ring disc, electrode unit	220 V	30 min
12	Remi centrifuge (9)	220 V	30 min
13	Rota vapor Buchi-R 215	220 V	1 hr
14	Chiller	220 V	1 hr
15	Deep fridge	220 V	2 hrs
16	Hot air oven (4)	220 V	1 hr
17	Chemical cabinet	220 V	1 hr
18	UV chamber	220 V	15 min
19	Ion meter	220 V	15 min
20	Tablet dissolution tester	220 V	15 min

Department :Central Instrumentation Lab

SNo	Name of the Instrument	Wattage/ Volts /Capacity	No. of hours
1	Gel Documentation with PC	300V	30 min
2	Rayleigh Spectro Photo Meter	200V	30 min
3	Eppendorf Mastercycler Pro	240V	3 hrs
4	D-Storm (PCR)	230V	2 hrs
5	Sigma Laborzentrifugen	230V	30 min
6	Sigma Micro Centrifuge	220V	30 min
7	Ultra Freezer (-80°c)	220V	Over night
8	Pharmaceutical Refrigerator	220 V	Over night
9	Ice Maker	240V	4 hrs
10	Water Purification System	240V	2 hrs

Department : Earth Sciences

SNo	Name of the Instrument	Wattage/ Volts /Capacity	No. of hours/ week
1	TDS Meter	230V	3 hrs
2	Flame Photo Meter	230V	3 hrs
3	Digital Ph Meter	230V	3 hrs
4	Digital Conductivity Meter	230V	3 hrs
5	Proton Magnato Meter	12 V	3 hrs
6	Pea Micro R Survey Meter	7.5 V	3 hrs
7	Pea gamma ray spectrometer	230 V	3 hrs
8	Monocular petrological microscopes	6 V	6 hrs
9	Binocular research polarized microscope	6 V	6 hrs
10	DC Resistivity Meter	18 V	3 hrs
11	Sieve shake digital	440 V/ 180 W	3 hrs
12	Computers	230 V	20 hrs
13	Sieve Shake	440 V	3 hrs

Department :Earth Sciences

SNo	Name of the Instrument	Wattage/ Volts /Capacity	No. of hours/ week
1	Laminar Airflow (3 Nos)	220V/230V	2 hrs
2	Thermo Static Water Bath	240/250V	1 hr
3	Centrifuge (2 Nos)	220/230V	1 hr
4	Floculator	210/220V	
5	Electronic Balance (2 Nos)	220/230V	½ hr
6	Digital Ph Meter (3 Nos)	210/220V	½ hr
7	EC/ TDS/ Nacl/ Meter	230V	30 min
8	Hot Air Oven (3 Nos)	240/250V	1 hr
9	Autoclave	220/230V	1 hr
10	Magnetic Stirrer (3 Nos)	220/230V	2 hr
11	Distillation Unit (2 Nos)	230V	4 hrs
12	Serelogical Water Bath	240/250V	15 min
13	Binocular Microscope (03 Nos)	220/240V	2 hrs
14	Flame Photo Meter	230V	30 min
15	Nephelo Meter	210/220V	15 min
16	Elect Photoresis	220/230V	30 min
17	Electronic Balance (2 Nos)	220/230V	½ hr
18	Orbital Shaking BOD Incubator (2 Nos)	220/240V	Over night
19	Water Bath	240/250V	30 min
20	UV Spectrophotometer	240/250V	30 min
21	Shaker Balance	220/230V	30 min
22	AAS	230/240V	30 min
23	Water Analysis Kit	220/240V	15 min

Department :Genetics & Genomics

SNo	Name of the Instrument	Wattage/ Volts /Capacity	No. of hours/ week
1	Laboratory Centrifuge	220/230V	1 hr
2	Spectrophotometer	240/250V	1 hr
3	Cooling Centrifuge (2 Nos)	220/230V	½ hr
4	Magnetic Stirrer	220/230V	2 hr
5	Colorimeter (2 Nos)	2010/220V	1 hr
6	Digital pH Meter	210/220V	½ hr
7	Water Bath (2 Nos)	240/250V	1 hr
8	Autoclave (2 Nos)	220/230V	1 hr
9	Incubator	230/240V	Over night
10	Laminar Air Flow (3 Nos)	220/230V	2 hrs
11	Electronic balance (2 Nos)	220/230V	½ hr
12	Binocular microscope	220/240 V	2 hr
13	Cyclomixer	220/240 V	½ hr
14	Distillation Unit (2 Nos)	230 V	2 hrs
15	Orbital Shaking Incubator (2 Nos)	220/240 V	½ hr
16	Electrophoresis unit	220/230 V	4 hrs
17	SDS Phage System	220/230 V	Over night
18	Sonicator	220/230 V	½ hr
19	PCR	240/250 V	½ hr
20	Stereo microscope	220/230 V	20 mins
21	-20 deep freezer	230 V	1 hr
22	CO2 Incubator	230 V	24 hrs
23	Desktop computers (15)	240 V	2 hrs

Gas cylinder - 1 per month

Department :Geology

SNo	Name of the Instrument	Wattage/ Volts /Capacity	No. of hours/ week
1	Geo chemistry pH Meter	230V	3 hrs
2	IDS Meter	230V	3 hrs
3	Computers		3 hrs

Department :Microbiology

SNo	Name of the Instrument	Wattage/ Volts /Capacity	No. of hours/ week
1	Laboratory Centrifuge	220/230 V	1 hr
2	Trans Illuminator	240/250 V	15 mins
3	Spectrophotometer	240/250 V	1 hr
4	Cooling Centrifuge	220/230 V	½ hr
5	Magnetic Stirrer (2 Nos)	220/230 V	2 hr
6	Colorimeter (4 Nos)	210/220 V	1 hr
7	Digital pH Meter	210/220 V	½ hr
8	Homogenizer	220/230 V	½ hr
9	Water bath (2 Nos)	240/250 V	1 hr
10	Autoclave	220/230 V	1 hr
11	Incubator	220/230 V	Over night
12	Laminar Air Flow (2 Nos)	220/230V	2 hrs
13	Electronic balance (2 Nos)	220/230 V	½ hr
14	Heating mantel (2 Nos)	240/250 V	1 hr
15	Binocular microscope (2 Nos)	220/240 V	2 hr
16	Inoculation Chamber	220/230 V	1 hr
17	Cyclomixer	220/240 V	½ hr
18	Distillation Unit (2 Nos)	240/250 V	4 hrs
19	Orbital Shanking Incubator	220/240 V	Over night
20	Electrophoresis unit (3 Nos)	220/230 V	½ hr
21	SDS Phage System (2 Nos)	220/230 V	½ hr
22	Hot Air Oven	240/250 V	1 hr
23	Sonicator	220/230 V	20 mins
24	PCR	240/250 V	1 ½ hr
25	HPLC	240/250 V	½ hr
26	Fermenter	240/250 V	Work stating 10 days
27	Anaerobic Chamber	240/250 V	1 hr
28	BOD Incubator	230/240 V	Over night
29	Colony Counter	220V	1 hr

Department :Material Science And Nano Technology

SNo	Name of the Instrument	Wattage/ Volts /Capacity	No. of hours/week
1	Micromilling	230 V	1.45 min
2	Chemical vapour deposition	220	5 hrs
3	Gas chromatography	240	5 hrs
4	Xe Arah lamp	270 watts	2 hrs
5	Sonicator	230 watts	10 min
6	Weighing balance (2 Nos)	100 – 240 watts	2 hrs
7	Magnetic Stirrers (4 Nos)	240 watts	2 hrs
8	pH Meter	250 V	1 hr
9	Distilled water	240 V	1 hr
10	Electronic ovens (3 Nos)	250 V	5 hrs
11	Muffle and tabular furnace	250 V	2 hrs
12	Centrifuge	250 V	2 hrs
13	Multi spine magnetic stirrer (2 Nos)	240 V	5 hrs
14	Vacuum pump	240 V	5 hrs
15	Particle size analyser	250 V	30 min
16	LCR Hitester	250 V	20 min
17	Hot Air Ovens	220 V	2 hrs
18	Muffle Furnace	230 V	1 hr
19	Centrifuge	230 V	1 hr
20	Refractometer	230 V	3 hrs
21	Weighing Balance	230 V	6 hrs
22	Ultrasonication bath	240 V	2 hrs
23	Probe sonicator	240 V	1 hr
24	Hydraulic press	--	20 min
25	Magnetic stirrers	230 V	2 hrs
26	Evaporation set up (Cell)	220 V	4 hrs
27	Mechanical stirrer	120 V	30 min
28	Solar cell apparatus	230 V	2 hrs
29	Hall effect apparatus	230 V	2 hrs
30	Zener diode	230 V	2 hrs
31	p-n junction diode	230 V	2 hrs
32	Bandgap semi conductor apparatus	230 V	2 hrs
33	LCR a – meter	230 V	40 min
34	Weighing balance	230 V	3 hrs

35	Distillation plant	230 V	1 hr
36	Melting point apparatus	230 V	9 hrs
37	Digital potentiometer	260 V	2 hrs
38	Digital conductometer	260 V	2 hrs
39	TDS Analyzer	230 V	1 hr
40	Centrifuge Remi R – 8C	220 V	30 min
41	Thermostatic water bath	230 V	15 min
42	Magnetic stirrer	230 V	15 min

Gas cylinders usage - 2 per month

Department :Physics

SNo	Name of the Instrument	Wattage/ Volts /Capacity	No. of hours/week
1	DC Magnetron sputtering unit	2 kw	5 hrs
2	Sulfurization unit	3.5 kw	2 hrs
3	Sonicator	1 kw	10 min
4	High Temperature Furnace	3.5 kw	1 hr
5	Hot Air Oven (2 Nos)	1 kw	2 hrs
6	Digital Balance	1 kw	10 min
7	Glove Box	2 kw	24 hrs
8	Hot Plate (2 Nos)	1 kw	10 min
9	Digital pH Meter (2 Nos)	1 kw	10 min
10	Aethalometer	15 wts	24 hrs per day
11	Multi wavelength solar radiometer	920 watts	12 hrs per day
12	Oven	220 v	1 hr
13	UV Photometric surface ozone analyser	150 Wts	30 min
14	Solar simulator	300 w	10 mins
15	Source meter	220 V	15 min
16	Electro chemical work station	5 V	15 min
17	Spin coater	220 V	5 mins
18	Spray coater	220 V	10 mins
19	O2/N2 atmospheric furnace	0.5 kw	5 mins
20	Vacuum pump	220 V	5 mins
21	Fume Hood	220 V	10 mins
22	Ultra sonicator	220 V	10 mins
23	p-n junction diode	220 V	3 hrs per day

24	Zoner diode	220 V	3 hrs per day
25	Transistor	220 V	3 hrs per day
26	Newton rings Na lamp (100 w)	220 V	3 hrs per day
27	Hg lamp (100 w)	220 V	3 hrs per day
28	Thermistor, electric heater (1000 w)	1000 w	3 hrs
29	Four probe kit	220 V	3 hrs
30	Thermo e.m.f. Dimmer	220 V	3 hrs
31	Hall effect Dimmer	220 V	3 hrs
32	Photo electric effect kit	220 V	3 hrs
33	Young's modulus elastic	220 V	3 hrs
34	Flip Flops	220 V	3 hrs
35	Multiplexer & Demultiplexer	220 V	3 hrs
36	8085 micro processor(5Nos)	220 V	3 hrs
37	8085 MP CRO, (5Nos)	220 V	3 hrs
38	Logic gates (15 Nos)	12 V	3 hrs
39	Gun diode	220 V	3 hrs
40	Hartmenn's dispersion Hg lamp	220 V	3 hrs
41	Specific heat of graphite	220 V	3 hrs
42	LASER	220 V	3 hrs
43	Optical fibre	220 V	3 hrs
44	8085 MP kits (5 Nos)	220 V	3 hrs
45	8051 MC kits (5 Nos)	220 V	3 hrs
46	C.R.O.'s (4 Nos)	220 V	3 hrs
47	Function generator (5 Nos)	220 V	3 hrs
48	Plank's Constant	220 V	3 hrs
49	Ultrasonic velocity	220 V	3 hrs
50	Solar cell	220 V	3 hrs
51	E.S.R.	220 V	3 hrs
52	GM Counter	220 V	3 hrs
53	L.D.R	220 V	3 hrs
54	Dielectric constant	220 V	3 hrs
55	Det Energy gap	220 V	3 hrs
56	Magnetic susceptibility (2 Nos)	220 V	3 hrs
57	Magnato resist of S.C.	220 V	3 hrs
58	Mono & Diatomic Lattice	220 V	3 hrs
59	8051 micro controller (5 Nos)	220 V	3 hrs
60	C.R.O.'s	220 V	3 hrs
61	8086 Micro processors	220 V	3 hrs
62	x-ray kit	220 V	3 hrs
63	Quink's tube	220 V	3 hrs

64	Resistivity measurement	220 V	3 hrs
65	Photo elastic constant	220 V	3 hrs
66	Differential phase shift keying	220 V	3 hrs
67	Frequency shift keying	220 V	3 hrs
68	Time Division Multiplying	220 V	3 hrs
69	Delta Modulation & demodulation	220 V	3 hrs
70	Balanced modulator	220	1 hrs
71	Analog T.D.M. and demultiplexing	220 V	3 hrs
72	Pulse code modulation & demodulation	220 V	3 hrs

Gas cylinders usage - 2 to 3 per month

Department :Psychology

SNo	Name of the Instrument	Wattage/ Volts /Capacity	No. of hours
1	Memory drum	220 – 380 V	1 hr
2	Mirror drawing apparatus	110 V	1 hr
3	Finger maze	220 V	1 hr
4	Steadiness tester	220 – 240 V	1 hr
5	Bio feedback machine	220 V	1 hr

Rusa Facility

SNo	Name of the Instrument	Wattage/ Volts /Capacity	No. of hours
1	Orbital shakers	230 V	Over night
2	EC.TDS Analyser	230 V	Over night
3	Polarimeter	100-120 V	5 hrs
4	FTIR	3.75 wts	5 hrs
5	Gaschromatography	230/240 V	5 hrs
6	Nano drop	240 V	3 hrs
7	UV Spectrophotometer	220-240 V	6 hrs
8	Electro chemical work station	24 v 2.5 A	Over night
9	SEM	220 V	3 hrs

Department :Zoology

SNo	Name of the Instrument	Wattage/ Volts /Capacity	No. of hours
1	Laboratory Centrifuge (2 Nos)	220/230 V	1 hr
2	Trans illuminator	240/250 V	15 mins
3	Laboratory Centrifuge (2 Nos)	220/230 V	1 hr
4	Spectrophotometer	240/250 V	1 hr
5	Cooling Centrifuge	220/230 V	½ hr
6	Magnetic Stirrer (2 Nos)	220/230 V	2 hr
7	Colorimeter (2 Nos)	210/220 V	1 hr
8	Digital pH meter (1 Nos)	210/220 V	½ hr
9	Homogenizer (2 Nos)	220/230 V	½ hr
10	Water Bath (4 Nos)	240/250 V	1 hr
11	Autoclave (2 Nos)	220/230 V	1 hr
12	Incubator	220/230 V	Over night
13	Laminar Air Flow	220/230 V	2 hrs
14	Electronic balance (2 Nos)	220/230 V	½ hr
15	Heating mantel (2 Nos)	240/250 V	1 hr
16	Microscopes (6 Nos)	220/240 V	2 hr
17	Cyclomixer	220/240 V	½ hr
18	Distillation Unit	240/250 V	4 hrs
19	Electrophoresis Unit (2 Nos)	220/230 V	½ hr
20	SDS Page System	220/230 V	½ hr
21	Hot Air Oven (2 Nos)	240/250 V	1 hr
22	PDR	240/250V	1 ½ hr
23	UV Cabinet Lamp	210/220 V	½ hr
24	Hot plate (2 Nos)	220/230 V	1 hr
25	Speed Regulator	210/220 V	1 hr
26	Cyclomixer	210/220 V	1 hr
27	Elisa Plate Reader	230/240 V	1 hr
28	Nano Spectrophotometry	240/250 V	15 min
29	Vortex	220 V	½ hr
30	Dry Bath	---	½ hr
31	Minirocker	230 V	½ hr

Annexure : 2 (Snapshot Of The Campus)


ARTS AND COMMERCE BUILDING

Nss Activities

Media Releases

YVU botanical park home to 7K exotic plants

అరుదైన పుట్టగొడుగు!

యువదళం.. సేవా పరిమళం

'ఇంటింటికీ ఔషధ మొక్క' డాక్యుమెంటల్

ఉత్సాహంగా సాగుతున్న ఇన్‌స్పైర్ శిబిరం

యువత సేవాస్ఫూర్తి... చైతన్య దీప్తి

వాననీటిని ఒడిసిపట్టారు..

వనాన్ని పెంచారు!

- ప్రైవేటులో కంటికిగా నీటి కొలను ఏర్పాటు
- 20 ఎకరాలో పచ్చదనం పెంపకం
- నీటి వనరుల పరిరక్షణ

మెరుగైన సమాజానికి పనిచేద్దాం

మాట్లాడుతున్న రిజిస్ట్రార్ ఆచార్య డి.విజయరాఘవప్రసాద్

యోవేవి, న్యూస్‌టుడే : మెరుగైన సమాజం కోసం స్వచ్ఛంద సంస్థలతో కలుపుకొని ప్రతి ఒక్కరూ సమాజసేవలో భాగస్వాములు కావాలని యోగి వేమన విశ్వవిద్యాలయం కులసచివులు ఆచార్య డి. విజయ రాఘవప్రసాద్ పిలుపునిచ్చారు. గురువారం వర్సిటీలో మానవతా సంస్థ ఆధ్వర్యంలో మానవతా విలువలపై అవగాహన కార్యక్రమం జరిగింది. ముఖ్య అతిథిగా హాజరైన రిజిస్ట్రార్ విజయరాఘవప్రసాద్, ప్రిన్సిపల్ సాంబశివారెడ్డి మాట్లాడుతూ.. కొవిడ్ సంకట పరిస్థితుల్లో మానవతా సంస్థ విస్తృత సేవలు అందించిందని కొనియాడారు. కార్యక్రమంలో సంస్థ అధ్యక్షులు రామచంద్రారెడ్డి, సంస్థ ఉపాధ్యక్షులు డాక్టర్ రామాంజులరెడ్డి, జాతీయ సేవా పథకం సమన్వయకర్త డాక్టర్ మధుసూదన్‌రెడ్డి, ఎన్‌సీ.గంగిరెడ్డి, గోపీ పాల్గొన్నారు.

శనివారం 21 నవంబర్ 2020

కరోనా మహమ్మారిపట్ల అప్రమత్తంగా ఉండాలి

మాట్లాడుతున్న వైద్యాధికారి

ఐదేళ్లు అర్హత, నవంబర్20 ప్రభాతవార్త:

కరోనా మహమ్మారిపట్ల అప్రమత్తంగా ఉండాలని వైద్యాధికారి చంద్రహాస్‌రెడ్డి అన్నారు. స్థానిక బీజేవేముల వీరారెడ్డి కళాశాలలో శుక్రవారం డిగ్రీ చదువుతున్న ఎన్ఎస్ఎస్ విద్యార్థులకు కరోనా రెండవ దశపై అవగాహనా కార్యక్రమాన్ని నిర్వహించారు. ఈ సందర్భంగా ఆయన మాట్లాడుతూ ఈవ్యాధి తగ్గిపోయిందని నిర్లక్ష్యం వహించరాదన్నారు. రెండలతూరి వ్యాధి సోకితే తీవ్ర పరినామాలను ఎదుర్కోవాల్సి ఉంటుందన్నారు.మాస్కులను తప్పని సరిగ్గా ధరించడమేకాకుండా సామాజిక దూరాన్ని పాటించాలన్నారు. అదే విదంగా పలురకాల ఆరోగ్యం విషయాలపై ప్రసంగించారు.కార్యక్రమంలో ప్రిన్సిపాల్ వెంకట సుబ్బారెడ్డి, లెక్చరర్స్ వెంకట్‌రావు,కళ్యాన్‌కుమార్,సిబ్బంది తదితరులు పాల్గొన్నారు.

కార్యక్రమంలో విద్యార్థులు

Fri, 20 November 2020
https://epaper.vaartha.com/c/56484807

ఆంధ్రపత్రిక 12/12

జాతీయసేవ దైవసేవ

రిజిస్ట్రార్ ఆచార్య విజయరాఘవ ప్రసాద్

మాట్లాడుతున్న ఆచార్య విజయరాఘవ ప్రసాద్

కడప ఎడ్యుకేషన్, నవంబర్ 9 (ప్రభ న్యూస్)

సమాజానికి ఉపయోగపడే జాతీయ సేవ దైవసేవతో సమానమని వైవీయూ నివర్తిటి కులసచీవులు ఆచార్య విజయ రాఘవప్రసాద్ అన్నారు. జాతీయ సేవా పథక దత్త గ్రామమైన అరవీటివాండ్ల పలెలో జరిగిన జాతీయ సేవకుల అభినందన సభలో ముఖ్యఅతిథిగా పాల్గొన్న ఆయన గ్రామీణాభివృద్ధిలో యువత విరివిగా పాల్గొనాలని పిలుపునిచ్చారు. మన పరిసరాలను, సమాజాన్ని సంస్కరించు కోవడం దేశభ క్తిలో భాగమని వివరించారు. విశిష్ట అతిథిగా పాల్గొన్న తెలుగుశాఖ ఆచార్యులు ఎన్.ఈశ్వర్ రెడ్డి మాట్లాడుతూ కృషి, పట్టుదలతో శ్రమిస్తే ఎంతటి లక్ష్యాన్నైనా సాధించ వచ్చని, గ్రామీణ యువత విద్యా అవసరాన్ని గుర్తించాలని అన్నారు. జాతీయ సేవా పథక సమన్వయకర్త డా.ఎ.మధుసూదన్ రెడ్డి మొక్కలు నాటడం, పరిసరాలను పరిశుభ్రతను పాటించడం లాంటి విషయాల్లో అరవీటివాండ్ల పల్లె ఇతర గ్రామాలకు ఆదర్శంగా నిలుస్తుందని అన్నారు.అనంతరం విద్యార్థులను ప్రోత్సహించిన అధ్యాపకులు చంద్రశేఖర్‌రెడ్డిని, సేవా కార్యక్రమాల్లో చురుగ్గా పాల్గొన్న సేవకులను సత్కరించారు.