

ANEKANT EDUCATION SOCIETY'S

**TULJARAM CHATURCHAND COLLEGE
OF ARTS, SCIENCE & COMMERCE
BARAMATI
(AUTONOMOUS)
DIST. PUNE -413 102**



**GREEN AUDIT
REPORT
2021-22**



Dr Vitthal B. Nale
Chairman, Green Audit Committee,
Tuljaram Chaturchand College of Arts,
Science & Commerce, Baramati, Dist.
Pune. (Autonomous Institute) Date –
20th Dec. 2022

To,
The Principal,
Tuljaram Chaturchand College of Arts, Science & Commerce,
Baramati, Dist. Pune. (Autonomous Institute)

Subject: - Submission of Green Audit Report 2021-22

Respected Sir,

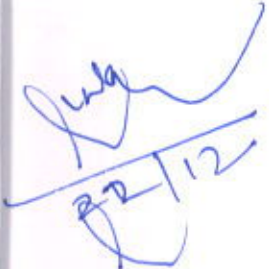
On behalf of all the members of committee, I am happy to submit the report of Green Audit for Academic year 2021-22. This Report also contains SWOT Analysis in various domains related with the making of our campus eco-friendly. I am thankful to you for giving me this opportunity.

Thanking you,

Yours' Sincerely,



Dr. Vitthal B. Nale



22/12



1. INTRODUCTION :

Anekant Education Society has been established in 1961 under the able guidance of Late Shri Fulchandji Gandhi, Education Minister of the former Hyderabad State. The founder President of the Society Late Shriman Seth Lalchand Hirachand Doshi, founder President of Premier Automobiles Ltd. and Walchand group of Industries was keen on staffing the college with the best talent.

The Jain concept "Siddhirnekantat" has become the motto and "Anekantvad" has become preamble through its incorporation in nomenclature of this Society. The Society started Degree College in Baramati in June, 1962. Baramati College, Baramati was later renamed as Tuljaram Chaturchand College of Arts, Science and Commerce. Government of Maharashtra has granted the status of 'Religious Minority Institution' to this society.

Tuljaram Chaturchand College is the oldest and premier reputed institute in Higher Education at Baramati, Dist. Pune, India. The college is affiliated to Savitribai Phule Pune University Pune. College has been accredited with "A+" grade (CPGA 3.5) by NAAC Bangalore. SPPU, Pune has awarded our college 'Best College Award' & our Principal as 'Best Principal Award' in academic year 2017-18. Our college has been selected for the schemes like DIST FIST 'O' Level, DBT Star College, CPE, etc. Our college is recognized as Best NSS Unit and Best NSS Officer. Our college is also one of the biggest study centers of YCMOU, Nashik. This 'Grand Academia' has been providing a stage for millions of aspiring students to realize their potential and excel in all walks of life. It has been constantly metamorphosing itself to be at the forefront of the revolutionary academic entity on one side and a skilled human resource provider to the corporate world on the other.

The college is now a full-fledged multi-faculty institute with student strength of about 12000. The college has junior wing running various streams like Arts, Science, Commerce & M.C.V.C. This College offers Bachelors' degree program in three streams – Arts, Commerce and Science with specializations in various subjects. We also offer B. Voc. Course in subjects like Journalism, Food Processing & technology, Dairy technology and Retail management and M.Voc. in Journalism, Food Processing & technology.

The college runs post-graduate courses in various subjects like English, Marathi, Hindi, Sociology, Political Science, Psychology, Economics, History, Chemistry, Physics, Botany, Zoology, Mathematics, Statistics, Electronics, Microbiology, B.Lib and Computer Science, Geography.



Department of Microbiology, Botany, Physics, Marathi, English, Economics and Commerce are recognized as research centers for guidance to Ph.D. students.

Considering the overall academic progress of the college UGC, New Delhi has conferred the Autonomous status to the college from December 2018 to December 2029

This college is spread over Thirty eight acres of beautiful lush-green area encompassing institutions catering to the academic needs of over twelve thousand students aspiring for Higher Education. Staff of the college always keeps itself updated with recent academic knowledge. College has well-trained administrative staff and excellent infrastructure.

UGC has been awarded the AUTONOMOUS status.

2. ENVIRONMENTAL POLICY OF THE COLLEGE :

Tuljaram Chaturchand College of Arts, Science & Commerce, Baramati is a quality-conscious college. It protects its own environment by maintaining it green with the help of about 713 large and many more small plants in campus. Our staff and students always try to keep the campus pollution free in all possible ways.

The management, administration and the students of the college look after the environment carefully. Every year, during rainy season, we perform tree-plantation and carefully look after the planted trees. As a result, now we have about 713 trees in our campus. Besides, we are having eco-friendly units like rain-water-harvesting units, wind-mill, solar panel, vermin-composting unit, biogas plant, etc.

We have our own environmental policy that includes-

- To comply with all requisite environmental legislations and government guidelines, wherever applicable.
- To ensure that there is optimum utilization of resources and waste generation is minimized.
- To integrate environmental concerns in decision-making, e.g. purchasing policy, teaching-learning process, communications, etc.
- To implement an environment management system.
- To strive towards continual reduction in ecological footprint of the college as it grows.
- Education and training of students, staff and society in environmental issues and the environmental effects of their activities.



- Monitoring progress and reviewing environmental performance against targets and objectives on a regular basis.
- To maintain the campus pollution-free by all possible ways like maximal use of green-energy like solar energy, wind-mill energy, natural light, etc.

3. ADVISORY COMMITTEE:

Sr. No.	Name	Designation
1	Dr.Chandrashekhar V. Murumkar	Principal
2	Dr. Avinash Jagtap	Vice-Principal
3	Dr. Ajit Telave	Vice-Principal
4	Dr. Seema Naik-Gosavi	Vice-Principal
5	Dr .Yogini Mulay	IQAC Coordinator Vice-Principal
6	Dr. Ramchandra Sapkal	Vice-Principal
7	Mr. Abhinandan Shah	Registrar

4. GREEN AUDIT COMMITTEE:

Sr. No.	Name of Teacher	Role
1	Dr.Vitthal Nale	Chairman
2	Dr. Ashok Kalange	Member
3	Mr. Maharudra Dudhe	Member
4	Mr. Ravikiranamrut Gandhi	Member
5	Dr. Mahadev Kanade	Member
6	Dr. Neeta Dhane	Member
7	Dr. Arun Magar	Member
8	Mr. Sandip Chordiya	Member
9	Smt. Varsha Shinde	Member
10	Dr. Sachin Kulkarni	Member
11	Dr. Madhuri Patil	Member
12	Smt. Anita Patil	Member



5. CONSTITUTION FOR GREEN AUDIT:

The Green Audit Committee will act as per the environmental policy and shoulder the responsibility for maintaining and protecting the environment in and around the college with the help of students, staff and society. It will work in various fields like-

- ❖ Air Pollution
- ❖ Bio-diversity and threatened species preservations
- ❖ Green area management and clean campus
- ❖ Noise Pollution
- ❖ Soil Management
- ❖ Eco-friendly techniques
- ❖ Water management
- ❖ Waste Management
- ❖ Paper less & Plastic less operating procedure
- ❖ Energy use and conservation
- ❖ E-waste management

6. AIR POLLUTION MANAGEMENT

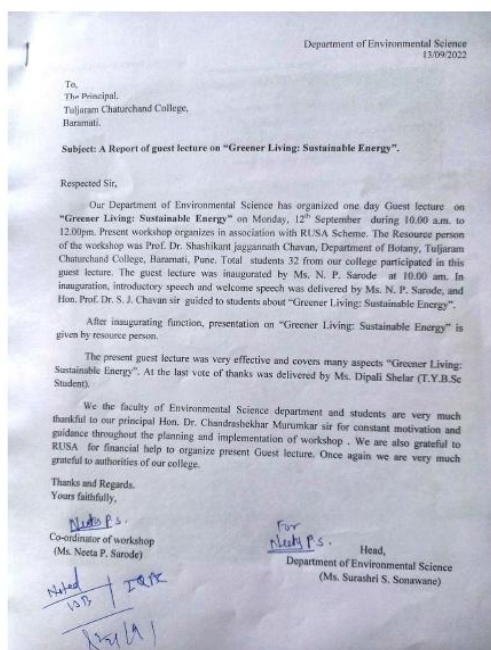
A. Periodic awareness programmes for students, society and staff:

Our college is continuously conducting the awareness programs for staff, students and society for protecting and maintaining the environment. The awareness is increased by arranging road shows, rallies and through Vidyarthi Sawand on various issues, related to environment and health. The students and faculty members are involved in the activities through extension programs like NSS/NCC. Subject related to environmental awareness given in to state level Kavivarya Moropant Elocution Competition organized by College.





Guest lecture – “Coexist living around urban wildlife” organized by Environmental Science Department on 5.08.2022

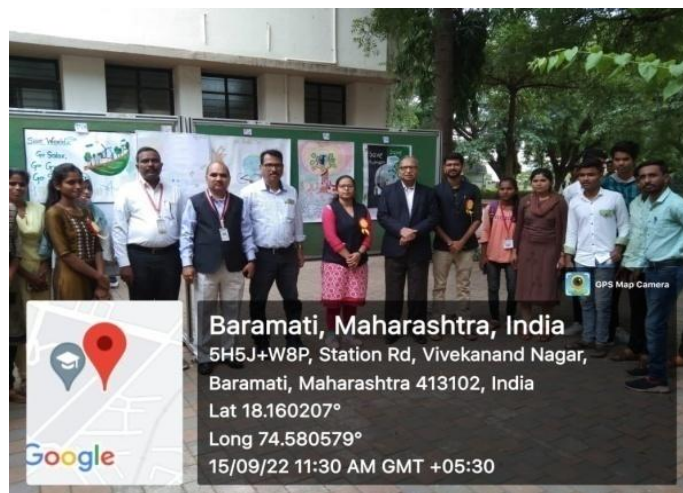


Guest lecture on – Greener living: sustainable energy

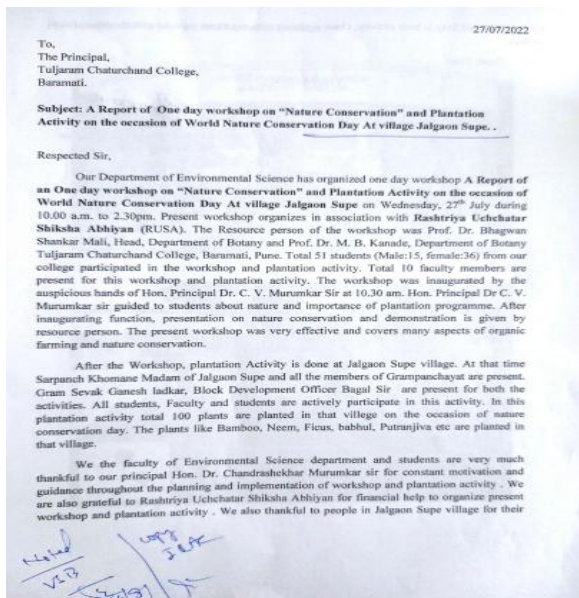




Workshop Water harvesting



Ozone day celebration on 15/09/2022



Nature conservation & tree Plantation workshop





Elocution competition on Zero emission day



Guest lecture on Wild life Conservation organized by Zoology Department on 7/10/2022



B. Conducting systematic study for carbon emission – Collecting statistical data.

Methodology:-

1. Girth and height of plants was calculated by using meter scale.
2. Generally trees having 72.5% average dry matter and 27.5% moisture content hence a fresh weight of plants was calculated by using the formula as $W=0.25D^2H$ (Where, D = diameter / girth of plant and H = height of plant)
3. Dry weight of plants was calculated using the formula as dry weight = wet weight X 72.5%.
4. Total tree volume contains 50% average carbon-content. Thus, amount of the carbon in trees was measured by multiplying dry weight by 50%.
5. CO₂ sequestered by trees was calculated by multiplying weight of carbon in trees by ratio of C in CO₂ i.e. 3.66.

Table No. 1: List of plants with girth size and CO₂ sequestered details in main campus of college

Sr. No.	Botanical name	No. of individuals	Year of Plantation	Girth				Height. (feet)	Canopy (Sq.Feet)	Age	CO ₂ Sequestered/year lbs
				< 5	5.1 – 10	10.1- 30	>30				
1.	<i>Acacia auriculiformis</i> A.	12	2005				√	40	1200	11	4969.813
2.	<i>Achras sapota</i> L.	03	2005				√	30	900	11	1448.260
3.	<i>Adathoda vasica</i> Nees	03	2007		√			3	15	9	6.512
4.	<i>Aegle marmelos</i> (L.) Corr.	01	1995				√	40	1200	21	930.324
5.	<i>Alstonia scholaris</i> (L.) R.Br.	32	2009				√	32	960	07	80839.275
6.	<i>Annona reticulata</i> L.	03	1995				√	10	300	21	512.627
7.	<i>Anthocephalus cadamba</i> (Roxb.) Miq.	05	2011				√	10	300	5	3831.445
8.	<i>Asparagus racemosus</i> Willd.	02	2011		√			1Inc.	0.4	5	10.207
9.	<i>Araucaria heterophylla</i> (salisb.) Franco	01	1982				√	90	2700	34	1220.053
10.	<i>Azadirachta indica</i> Juss.	49	1993				√	30	900	23	44849.688

11.	<i>Bambusa arundinacea</i> (Retz.) Willd.	04	1985			√		10	200	31	296.332
12.	<i>Bauhinia purpurea</i> L.	03	1997			√		18	360	19	888.410
13.	<i>Bauhinia racemosa</i> Lam.	01	1998				√	50	1500	18	22427.445
14.	<i>Bougainvillea spectabilis</i> Willd.	46	2000			√		60	1200	16	5373.217
15.	<i>Butea monosperma</i> (Lam.) Taub	01	1987			√		6	120	29	64.674
16.	<i>Caesalpinia pulcherima</i> (L.) Sw.	07	1990		√			6	42	26	52.139
17.	<i>Callistemon lanceolatus</i> (Sm.) Sweet.	02	1990				√	17	510	26	769.710
18.	<i>Carica papaya</i> L.	02	2005			√		8	160	11	487.731
19.	<i>Caryota urens</i> L.	02	2000			√		6	120	16	186.895
20.	<i>Cassia auriculata</i> L.	01	1993			√		10	200	23	135.908
21.	<i>Cassia fistula</i> L.	02	1985			√		15	300	31	324.473
22.	<i>Casurina equisetifolia</i> L.	01	1997				√	70	2100	19	2974.587
23.	<i>Chlorophytum laxum</i> R.Br.	01	2005		√			1.5	7.5	11	0.489
24.	<i>Cocus nucifera</i> L.	02	2001				√	80	2400	15	7502.130
25.	<i>Plectranthus scutellarioides</i> (L.) R.Br.	10	2005	√				02	10	11	11.599
26.	<i>Cycas circinalis</i> L.	05	1983				√	3	90	33	122.513
27.	<i>Dalbergia sisso</i> Roxb. Ex. DC	02	1985				√	65	1950	31	3091.521
28.	<i>Delonix regia</i> (Hook.) Raf.	08	1984				√	50	1500	32	12459.691
29.	<i>Dombeya acutangula</i> Cav.	08	2005				√	8	240	11	1818.698
30.	<i>Draceana fragrans</i> (L.) Ker.Gawl.	01	2010			√		10	200	6	484.300
31.	<i>Emblica officinalis</i> Gaertn.	01	2011				√	25	750	5	3032.111
32.	<i>Eucalyptus globulus</i> Labill.	02	2011				√	70	2100	5	18766.488
33.	<i>Ficus benghalensis</i> L.	02	1981				√	60	1800	35	7689.410
34.	<i>Ficus elastica</i> Roxb.	01	2001				√	25	750	15	723.632
35.	<i>Ficus racemosa</i> L.	01	1983				√	60	1800	33	1046.795
36.	<i>Ficus religiosa</i> L.	01	1983				√	40	1200	33	1022.631
37.	<i>Ficus benamina</i> L.	05	1983				√	25	750	11	4077.717

38.	<i>Hamelia patens</i> Jacq.	11	2005			√		6	120	11	1054.987
39.	<i>Hibiscus rosa sinensis</i> L.	06	2005			√		5	100	11	352.315
40.	<i>Ixora coccinia</i> L.	05	2005			√		6	120	11	575.230
41.	<i>Jatropha curcus</i> L.	09	2005			√		7	140	11	2055.169
42.	<i>Lantana camera</i> L.	01	2010			√		3	60	6	87.916
43.	<i>Lawsonia inermis</i> L.	01	2010		√			3	15	6	19.936
44.	<i>Mangifera indica</i> L.	07	1984				√	50	1500	32	7692.613
45.	<i>Millingtonia hortensis</i> L.	01	1985				√	60	1800	32	1513.853
46.	<i>Mimusops elengi</i> L.	32	2001				√	30	900	15	21460.174
47.	<i>Moringa oleifera</i> Lam.	01	2005				√	10	300	11	326.217
48.	<i>Murraya paniculata</i> (L.)	01	2011			√		3	60	5	23.923
49.	<i>Nerium indicum</i> Mill.	10	2001			√		3.5	70	15	301.425
50.	<i>Peltophorum pterocarpum</i> (DC.) Baker.	02	2005				√	50	1500	11	5799.420
51.	<i>Pithecellobium dulce</i> (Roxb.) Benth.	01	2011				√	56	1680	15	2149.420
52.	<i>Polyalthia longifolia</i> (Sonner.) Thw.	57	2001				√	32	960	15	58649.462
53.	<i>Prosopis cineraria</i> L.	01	1995			√		6	120	21	83.046
54.	<i>Psidium guajava</i> L.	01	2001			√		8	160	15	47.845
55.	<i>Rauvolfia serpentine</i> L.	01	2005		√			2	10	11	2.610
56.	<i>Ravenala madagascariensis</i> J.F.Gmel.	03	2010			√		35	700	6	2790.971
57.	<i>Rosa indica</i> L.	05	2010		√			2	10	6	23.923
58.	<i>Roystenia regia</i> (H.B.&K)	28	1995				√	50	1500	21	28946.355
59.	<i>Russelia equisetiformis</i> Schlecht & Cham	01	2011		√			1.5	7.5	5	9.697
60.	<i>Samanea saman</i> (Jacq.) Merr.	12	1997				√	75	2250	19	24476.605
61.	<i>Santalum album</i> L.	01	1999			√		15	300	17	219.872
62.	<i>Sapindus laurifolius</i> Vahl.	02	2000			√		8	160	16	25.517

63.	<i>Securinega leucopyrus</i> (Willd.) Muell.-Arg.	12	2001		√			5	25	15	39.871
64.	<i>Spathodea companulata</i> P. Beauv.	01	2005			√		25	500	11	762.073
65.	<i>Swietenia mahagoni</i> L.	03	2005				√	70	2100	11	9324.380
66.	<i>Syzygium cumini</i> (L.)	02	2001				√	60	1800	15	3266.233
67.	<i>Tabernaemontana divaricata</i> (L.)R.Br.	17	2001		√			5	25	15	225.936
68.	<i>Tamarindus indica</i> L.	08	2004				√	40	1200	12	9569.043
69.	<i>Tecoma stans</i> L.	10	2001			√		8	160	15	172.243
70.	<i>Thuja occidentalis</i> L.	04	2001			√		1	20	15	6.805
71.	<i>Allamanda cathartica</i> L.	01	2001			√		3	60	15	413.383
72.	<i>Dyopsis lutescens</i> (H.Wendl) Beentje & J. Dransf.	90	2001		√			6	42	15	1265.984
73.	<i>Terminalia catappa</i> L.	11	2001				√	50	1500	15	1628.066
No of Individuals		603							416330.8		419811.97 lbs 190.595 tonnes per yr



Table No. 2: List of plants with girth size and CO₂ sequestered details in gymkhana of college

Sr. No.	Botanical name	No. of individuals	Plantation year	Girth (Feet)				Height. (feet)	Canopy (sq. Feet)	Age (year)	CO ₂ Seques./yr (lbs)
				< 5.1	5.1-10	10-15	> 15				
1	<i>Limmonia acidissima</i>	1	2005				√	40	1200	11	1879.0121
2	<i>Ficus racemosa</i> L.	1	2005				√	40	1400	11	1776.0724
3	<i>Azadirachta indica</i> Juss.	14	2005			√		30	600	11	6089.391
4	<i>Spathodea companulata</i> P. Beauv.	55	2005			√		20	400	11	24919.383
5	<i>Alstonia scholaris</i> (L.) R.Br.	55	2005			√		30	600	11	46888.311
	Total No of Individuals	110							66000		81552.168 97lbs/yr (37.025ton nes/yr)

Total Campus of the college is spread over the area of thirty eight acres. Total Building area of institute is 27002.66 m² (6.67 acres) including administrative building, library, classroom building, boys and girls hostels, auto building, junior college building, gymnasium, Jeevraj auditorium, Prerana building, DLS building etc.

Out of 38 acres of the campus, 12 acres are under canopy. Institution has developed lush-green campus by planting large number of plants. According to survey, institution has planted around 713 plants of 73 different varieties.

Out of 38 acres area approximately 19 acre is the open area which is useful for the various activities of students, staff etc.

Carbon footprint

An important aspect of undertaking an audit is to be able to measure our impact on environment so that we can determine better ways to manage the impact. In addition to the water, waste, energy and biodiversity audits, we can also determine our carbon footprint based on the amount of carbon emissions.

By evaluating the CO₂ emissions in the campus, it becomes easy to devise the strategies for sustainability of the ecosystem.

Carbon footprint evaluation was performed in two phases:

- Phase 1: Defining the carbon footprint parameters
- Phase 2: Quantifying the carbon footprint.

In this report we have identified and defined carbon footprint inventory parameters such as electricity, human, waste, paper, LPG etc. The amount of CO₂ emitted by the various footprint parameters was calculated by using standard CO₂ emission factors.

Table No. 3: Carbon Footprints of college campus

Sr. No.	Carbon footprint Parameters	Amount of CO ₂ Emission (tons/year)
1	Human	739.25
2	Electricity	344.06
3	Waste	290.36
4	LPG	69.51
5	Transport	58.83
6	Paper	19.7
Total		1521.71

Carbon footprint study reveals that 1521.71 tons CO₂ are emitted within a year in the campus. Survey reveals that Plants present in the campus sequester about 227.62 tones of CO₂ per year. There is huge difference in CO₂ emitted and CO₂ Sequestered in the campus.

C. Plantation programme throughout the year:

College arranges plantation programmes through NSS/NCC unit, Students & staff not only in college campus but in various villages of Baramati Tehsil like Anjangaon, Songaon, Barhanpur, Jalgaon - Supe etc. which are adopted by our college for the sake of environment awareness. College has planted and maintained large number of plants through NSS unit.





Tree Plantation on the occasion of World Environment Day.



COT. MAYURI SUNIL SHEVTE

**Tree plantation by National Cadet Corps, on 5th June 2021
on the occasion of World Environment Day.**



Mazi Vasundhara Abhiyan





**टी.सी कॉलेज, अर्थशास्त्र विभागांतर्गत
ब-हाणपूर गावात वृक्षारोपण कार्यक्रम!!**



Tree Plantation by Department of Economics at Barhanpur



Mazi Vasundhara Abhiyan (Tree Counting)

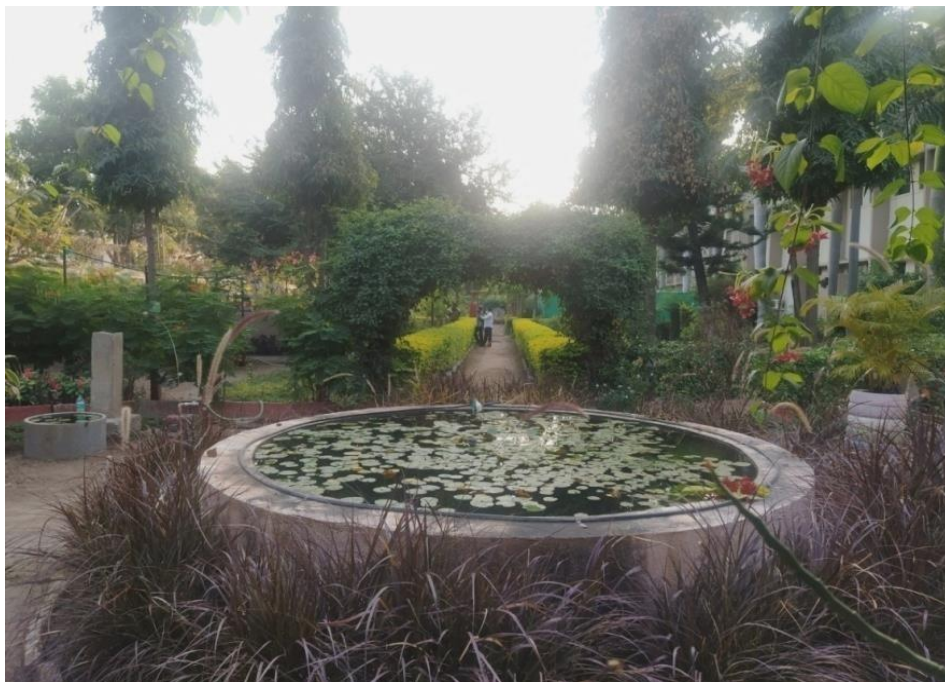




Jalgaon- Supe tree plantation by Environmental science & Botany department on 27/07/2022



Photographs of Flourished Botanical Garden



Aquatic Plants





Fernery



A garden of medicinal plants has been established in the botanical garden of college. Area of the said garden is about 15000 sq ft. List is attached.



A butterfly garden has been established in the botanical garden of college. Area of the said garden is about 6000 sq ft. List is attached.



Cacti and Succulents





Bonsai Garden





Nursery



D. Establishment of oxygen park, plantation of ox rich plants

Our college has a beautiful green campus. We have skillfully planted the plants so as to have oxygen and make the campus fresh full of oxygen. The greenery has remained useful in developing Oxygen Park in our college.

One 'Oxygen Park' has been established in the Botanical garden of college in the year 2017-18. It is established in the area of 1000 sq ft. in which holy basil (Tulsi) has been planted.

College is also maintaining about 100 oxy-rich potted plants like *Croton*, Runner Palm, *Aloe vera*, *Diphenbekia*, *Sensevieria*, *Costus* (Insulin plant), *Chlorophytum*, etc.



E. 'No Smoking, No Tobacco' in campus area:

College is completely smoking and tobacco free campus. Students and staff members are aware about addiction. We have displayed the boards like 'No Smoking' 'No Tobacco', 'No Gutkha' etc. at several places in the campus for prohibiting from such habits.



F. Establishment of weather data centre:

The college has installed an automatic weather station worth Rs. 1, 20,000/- in the department of Geography in year 2015. It provides digital data of almost all the weather parameters and weather forecast.

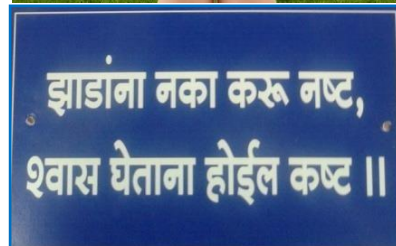
Soil moisture measuring facility is available in the Department of Chemistry.

- Average Temperature – 30°C
- Average Rainfall – 550 mm

G. Display boards in college campus:

Various boards for increasing the awareness on the environment, noise control, tobacco free campus, conservation of energy, recycling of resources, tree plantation and environmental policy of college are displayed for all the stakeholders.

Boards of increasing awareness about ecofriendly attitude are displayed in the campus.



H. Eco-ventilators/Exhaust fans in laboratory and library:

All the laboratories and library are having good ventilation and exhaust fans.



I. Maintain data for flora of college campus:

Tuljaram Chaturchand College of Arts, Science & Commerce, Baramati is having green campus, which comprises of following flora:

Table No. 4: List of Plants In Main Campus of College

Sr. No.	Botanical name	Common Name	Family	No. of Individuals
1.	<i>Acacia auriculiformis</i> A.Cunn. ex Benth.	Australian Babal	Fabaceae	12
2.	<i>Achras sapota</i> L.	Chikku	Sapotaceae	03
3.	<i>Adathoda vasica</i> Nees	Adulsa	Acanthaceae	03
4.	<i>Aegle marmelos</i> (L.) Corr.	Bel	Rutaceae	01
5.	<i>Allamanda cathartica</i> L.	Golden trumpet	Apocynaceae	01
6.	<i>Alstonia scholaris</i> . (L.) R.Br.	Saptaparn	Apocynaceae	32
7.	<i>Annona reticulata</i> L.	Ramphal	Annonaceae	03
8.	<i>Anthocephalus cadamba</i> (Roxb.) Miq.	Kadamb	Rubiaceae	05
9.	<i>Araucaria heterophylla</i> (salisb.) Franco	Christmas	Araucariaceae	01
10.	<i>Asparagus racemosus</i> Willd.	Shatavari	Asparagaceae	02
11.	<i>Azadirachta indica</i> Juss.	Neem	Meliaceae	49
12.	<i>Bambusa arundinacea</i> (Retz.) Willd.	Bamboo	Poaceae	04
13.	<i>Bauhinia purpurea</i> L.	Orchid tree	Leguminosae	03
14.	<i>Bauhinia racemosa</i> Lam.		Leguminosae	01
15.	<i>Bougainvillea spectabilis</i> Willd.	Kagadi ful	Nyctaginaceae	46
16.	<i>Butea monosperma</i> (Lam.)Taub	Palas	Fabaceae	01
17.	<i>Caesalpinia pulcherrima</i> (L.) Sw.	Sankasur	Fabaceae	07
18.	<i>Callistemon lanceolatus</i> (Sm.) Sweet.	Bottlebrush	Myrtaceae	02
19.	<i>Carica papaya</i> L.	Papaya	Caricaceae	02
20.	<i>Caryota urens</i> L.	Kithul	Arecaceae	02
21.	<i>Cassia auriculata</i> L.	Ranawara	Fabaceae	01
22.	<i>Cassia fistula</i> L.	Golden shower	Fabaceae	02
23.	<i>Casuarina equisetifolia</i> L.	Suru	Casuarinaceae	01
24.	<i>Chlorophytum laxum</i> R.Br.	Bichetii grass	Asparagaceae	01
25.	<i>Cocus nucifera</i> L.	Coconut	Arecaceae	02
26.	<i>Cycas circinalis</i> L.	Queen sago	Cycadaceae	05
27.	<i>Dalbergia sisso</i> Roxb. Ex. DC	Sisu	Fabaceae	02
28.	<i>Delonix regia</i> (Hook.) Raf.	Gulmohar	Fabaceae	08

29.	<i>Dombeya acutangula</i> Cav.	Bois Bete	Malvaceae	08
30.	<i>Dracaena fragrans</i> (L.) Ker.Gawl.	Mass Cane	Asparagaceae	01
31.	<i>Dyopsis lutescens</i> (H.Wendl) Beentje & J. Dransf.	Butterfly palm	Arecaceae	97
32.	<i>Embllica officinalis</i> Gaertn.	Awala	Phyllanthaceae	01
33.	<i>Eucalyptus globulus</i> Labill.	Nilgiri	Myrtaceae	02
34.	<i>Ficus benghalensis</i> L.	Wad	Moraceae	02
35.	<i>Ficus benjamina</i> L.	Benjamin fig	Moraceae	05
36.	<i>Ficus elastica</i> Roxb.	Rubber tree	Moraceae	01
37.	<i>Ficus racemosa</i> L.	Cluster fig tree	Moraceae	01
38.	<i>Ficus religiosa</i> L.	Pimpal	Moraceae	01
39.	<i>Hamelia patens</i> Jacq.	Firebush	Rubiaceae	11
40.	<i>Hibiscus rosa sinensis</i> L.	Jaswand	Malvaceae	10
41.	<i>Ixora coccinea</i> L.	Jungle geranium	Rubiaceae	05
42.	<i>Jatropha curcas</i> L.	Mogli erand	Euphorbiaceae ¹	09
43.	<i>Lantana camara</i> L.	Tantani	Verbenaceae	01
44.	<i>Lawsonia inermis</i> L.	Hina	Lythraceae	01
45.	<i>Mangifera indica</i> L.	Amba	Anacardiaceae	07
46.	<i>Millingtonia hortensis</i> L.	Buch	Bignoniaceae	01
47.	<i>Mimusops elengi</i> L.	Bakul	Sapotaceae	32
48.	<i>Moringa oleifera</i> Lam.	Shevaga	Moringaceae	01
49.	<i>Murraya paniculata</i> L.	Kunti	Rutaceae	01
50.	<i>Nerium indicum</i> Mill.	Kaneri	Apocynaceae	10
51.	<i>Peltophorum pterocarpum</i> (DC.) Baker.	Copper pod	Fabaceae	02
52.	<i>Pithecellobium dulce</i> (Roxb.) Benth.	Vilayati chinch	Fabaceae	01
53.	<i>Plectranthus scutellarioides</i> (L.) R.Br.	Painted nettle	Lamiaceae	10
54.	<i>Polyalthia longifolia</i> (Sonner.) Thw.	Ashoka	Annonaceae	57
55.	<i>Prosopis cineraria</i> L.	Shami	Fabaceae	01
56.	<i>Psidium guajava</i> L.	Peru	Myrtaceae	01
57.	<i>Rauvolfia serpentine</i> L.	Sarpgandha	Apocynaceae	01
58.	<i>Ravenala madagascariensis</i> J.F.Gmel.	Traveller's palm	Strelitziaceae	03
59.	<i>Rosa indica</i> L.	Gulab	Rosaceae	05
60.	<i>Roystenia regia</i> H.B.&K	Royal palm	Arecaceae	28
61.	<i>Russelia equisetiformis</i> Schlecht & Cham	Fountain bush	Plantaginaceae	01

62.	<i>Samanea saman</i> (Jacq.) Merr.	Rain tree	Fabaceae	12
63.	<i>Santalum album</i> L.	Chandan	Santalaceae	01
64.	<i>Sapindus laurifolius</i> Vahl.	Ritha	Sapindaceae	02
65.	<i>Securinega leucopyrus</i> (Willd.) Muell.-Arg.		Phyllanthaceae	12
66.	<i>Spathodea companulata</i> P. Beauv.	Pichkari	Bignoniaceae	01
67.	<i>Swietenia mahagoni</i> L.	Mohagani	Meliaceae	03
68.	<i>Syzygium cumini</i> L.	Java plum	Myrtaceae	02
69.	<i>Tabernaemontana divaricata</i> (L.) R.Br.	Tagar	Apocynaceae	17
70.	<i>Tamarindus indica</i> L.	Chinch	Fabaceae	08
71.	<i>Tecoma stans</i> L.	Yellow trumpetbush	Bignoniaceae	10
72.	<i>Terminalia catappa</i> L.	Jangali badama	Combretaceae	11
73.	<i>Thuja occidentalis</i> L.	Morpankhi	Cupressaceae	04
Number of Individuals				603

Table No. 5: List of plants in gymkhana of college

Sr. No.	Botanical name	Common Name	Family	No. of Individuals
1.	<i>Alstonia scholaris</i> (L.) R.Br.	White Cheesewood	Apocynaceae	55
2.	<i>Azadirachta indica</i> Juss.	Neem	Meliaceae	14
3.	<i>Ficus racemosa</i> L.	Umabar	Moraceae.	01
4.	<i>Limmonia acidissima</i>	Elephant-Apple	Rutaceae	01
5.	<i>Spathodea companulata</i> P. Beauv.	Pichkari	Bignoniaceae	55
Number of Individuals				110

Table No. 6: List of Medicinal Plants in College Campus

Sr. No	Botanical name	Common Name	Family	Use	Part Used	Habit
1.	<i>Costus igneus</i> N.E.Br.	Insulin plant	Costaceae	Anti-diabetic	Leaves	Herb
2.	<i>Bacopa monnieri</i> (L.) Pennell	Neerbhrami	Plantaginaceae	Mental functioning, including comprehension, memory, recollection	Leaves	Herb

3.	<i>Pterocarpus santalinus</i> L.f.	Raktachandan	Fabaceae	Antipyretic, anti-inflammatory, anthelmintic,	Wood	Tree
				tonic, hemorrhage, dysentery, aphrodisiac, anti-hyperglycaemic and diaphoretic		
4.	<i>Hemidesmus indicus</i> (L.) R.Br.	Anantmool	Apocynaceae	Coolant and a blood-purifier	Root	Climber
5.	<i>Eclipta prostrata</i> L.	Maka	Asteraceae	Improve hair growth and colour	Leaves and stem	Herb
6.	<i>Rauwolfia serpentina</i> (L.) Benth. ex Kurz	Sarpagandha	Apocynaceae	High blood pressure and mental disorders including schizophrenia	Leaves	Shrub
7.	<i>Abrus precatorius</i> L.	Gunj	Fabaceae	Fevers, coughs and colds	Leaves	Climber
8.	<i>Acacia catechu</i> (L.f.) P.J.H.Hurter & Mabb.	Khair	Fabaceae	Sore throats , diarrhea	Wood and Bark	Small tree
9.	<i>Stevia rebaudiana</i> Bertoni	Stevia	Asteraceae	Lower blood sugar	Leaves	Herb
10.	<i>Ocimum kilimandscharicum</i> Gurke	Kapoortulas	Lamiaceae	Lower fevers	Leaves	Herb
11.	<i>Swertia chirata</i> L.	Kadechitayat	Gentianaceae	Fever	All plant parts	Herb
12.	<i>Acacia concinna</i> (Willd.)DC.	Shikekai	Fabaceae	Hair tonic	Bark, leaves or pods	Climber
13.	<i>Terminalia achebula</i> Retz	Hirda	Combretaceae	Antibacterial and anticandidal activities	Seeds	Tree
14.	<i>Anacyclus pyrethrum</i> (L.) Link	Akkalkadha	Asteraceae	Treatment of men's diseases, common cold, toothache and pyorrhea	Roots	Herb
15.	<i>Vetiveria zizanioides</i>	Vala	Poaceae	Antimicrobial, Antioxidant; Anti-inflammatory	Roots	Herb
16.	<i>Woodfordia floribunda</i> (L.) Kurz	Dhayati	Lythraceae	Effect on Tridosha: It balances Kapha and Pitta.	Leaves	Small tree

17.	<i>Ocimum basilicum</i> L.	Sabja	Lamiaceae	Headaches, coughs, diarrhea, constipation, warts, worms, and	Seeds	Herb
				kidney malfunction		
18.	<i>Caesalpinia crista</i> L.	Sagargota	Fabaceae	Diabetes, malarial fever	Stem and leaves	Climber
19.	<i>Mentha piperita</i> L.	Papermint	Lamiaceae	Antispasmodic, irritable bowel syndrome	Leaves	Herb
20.		Triphala				Tree
21.	<i>Bixa orellana</i> L.	Bixa	Bixaceae	Antileishmanial and antifungal	All plant parts	Large shrub
22.	<i>Ocimum gratissimum</i> L.	Vaijayanti tulas	Lamiaceae	Antidiabetic	Leaves	Herb
23.	<i>Gmelina arborea</i> Roxb	Shivan	Lamiaceae	Leprosy, blood diseases and hallucination, piles, abdominal pains, burning sensations, fevers, 'tridosha' and urinary discharge.	Flower, root and bark	Tree
24.	<i>Holarrhena pubescens</i> Wall.	Pandhara kuda	Apocynaceae	Dysentery	Leaves	Small tree
25.	<i>Wrightia tinctora</i> (Roxb) R.Br	Kala kuda	Apocynaceae	Diarrhoea, piles, ringworm and other skin diseases	Bark and seeds	Tree
26.	<i>Strychnos nux-vomica</i>	Kuchala	Loganiaceae	Antidiarrhoeal activity	Stem	Small tree
27.	<i>Apodytes nimmoniana</i>	Narkya	Icacinaceae	Anti-cancer	All plant parts	Small tree
28.	<i>Acorus calamus</i> L.	Vekhand	Acoraceae	Asthma , sore throat	Leaves, stems and roots	Herb
29.	<i>Terminalia bellirica</i> (Gaertn.) Roxb.	Behada	Combretaceae	Skin disease, cough, asthma, cold cough	Leaves	Tree
30.	<i>Piper longum</i> L.	Lendi pimpali	Piperaceae	Cancer	Leaves	Climber
31.	<i>Carissa carandas</i> L.	Karvand	Apocynaceae	Anaemia	fruit	Shrub
32.	<i>Piper nigrum</i> L.	Kalimiri	Piperaceae	Skin disorders, itching	seed	Climber
33.	<i>Celastrus paniculatus</i> Willd.	Malkangani	Celastraceae	Relax the nerves	Seed	Small tree

34.	<i>Cinnamomum zeylanicum</i> J.Presl	Dalchini	Lauraceae .	Cough	Bark	Tree
35.	<i>Coffea arabica</i> L.	Coffee	Rubiaceae	Asthma	Bean	Shrub
36.	<i>Myristica fragrans</i> Huott.	Jaayphal	Myristicaceae	Dyspepsia, intestinal gases	Fruit	Tree
37.	<i>Pimento dioica</i>	Allspices	Myrtaceae	Anesthetic for tooth aches	Fruit	Tree
38.	<i>Madhuca longifolia</i> (J.Konig) J.F.Macbr.	Moh	Sapotaceae	Arrest the excessive bleeding	Leaves	Tree
39.	<i>Garcinia indica</i> Choisy	Kokam	Clusiaceae	Indigestion, bloting and abdominal pain	Fruits	Tree
40.	<i>Gardenia resinifera</i>	Dikemali	Rubiaceae	Tooth tonic, malaria	Stem	Tree
41.	Elaeocarpus ganitrus Roxb	Rudraksha	Elaeocarpaceae	Typhoid, headache	Seed, Leaves, Bark	Tree
42.	<i>Citrus medica</i> L.	Mahalungi	Rutaceae	Abdominal colic, digestive disorders	Fruit	Tree
43.	<i>Ananus comosus</i> (L.) Merr.	Pineapple	Bromeliaceae	Antidiabetic and antioxidant	Fruit	Herb
44.	<i>Helicteres isora</i> L.	Murudsheng	Steralliaceae	Dysentery	Pod	Climber
45.	<i>Curcuma longa</i> L.	Halad	Zingiberaceae	Blood purifier, liver ailments	Rhizomes	Herb
46.	<i>Vitex negundo</i> L.	Nirgudi	Lamiaceae	Eczema, ringworm and other skin diseases	Root and leaves	Shrub
47.	<i>Curcuma caesia</i> Roxb.	Ambe halad	Zingiberaceae	Toothach, migraiane and epilepsy	Rhizomes	Herb
48.	<i>Gloriosa superb</i> L.	Kal lavi	Colchicaceae	Rheumatism and gout	Rhizome	Herb
49.	<i>Plectranthus amboinicus</i> (Lour.)	Coleus	Lamiaceae	Coughs	leaves	Tender
50.	<i>Cyperus scariosus</i> R.Br.	Nagarmotha	Cyperaceae	Aromatherapy	Roots	Herb
51.	<i>Ipomoea quamoclit</i> L.	Ganeshvel	Convolvulaceae	Weakness, Nervous debility, Loss of memory, Syphilis, Scrofula, Skin diseases,	Flowers	Climber
52.	<i>Semecarpus anacardium</i> L.f.	Biba	Anacardiaceae	Blood pressure, respiration, cancer and neurological disorders	Fruits	Tree
55.	<i>Commiphora wightii</i> (Arn.) Bhandari	Gugal	Burseraceae	Decreased cholesterol synthesis in the liver	Bark	Tree
56.	<i>Canarium strictum</i> R OXB.	Dhup	Burseraceae	Bronchial diseases	Leaves	Tree

Beauty of Flowers in College Campus



Canna indica L.



Canna indica L.



Canna indica L.



Rosa indica L.



Rosa indica L.



Rosa indica L.



Gerbera jamesonii Hooker



Gerbera jamesonii Hooker



Gerbera jamesonii Hooker



Gerbera jamesonii Hooker



Catharanthus roseus L.



Catharanthus roseus L.



Tecoma stans L.



Tabernaemontana divaricata L.



Bellis perennis L.

Plate No. 1



Chrysanthemum indicum L.



Gaillardia aristata L.



Verbena officinalis L.



Nerium indicum L.



Plumbago zeylanica L.



Polyanthes tuberosa L.



Lantana camara L.



Lantana camara L.



Lantana camara L.



Lantana camara L.



Ixora coccinea L.



Tecoma capensis Thunb.



Pentas lanceolata Forssk.



Pentas lanceolata Forssk.



Pentas lanceolata Forssk.



Plate No. 2



Ixora coccinea L.



Stachytarpheta jamaicensis L.



Pelargonium hortorum L.

Medicinal Plant Garden



Ficus carica L.



Aloe vera L.



Bryophyllum pinnatum L.



Cymbopogon citrates L.



Costus igneus N.E.Br.



Mimosa pudica L.



Asparagus racemosus L.



Datura metel L.

Plate No. 3





Pelargonium hortorum L.

Ruta graveolens L.



Mentha spicata L.

Trachyspermum ammi Sprague

Curcuma longa L.



Withania somnifera L.

Piper nigrum L.



Ocimum gratissimum

Plate No. 4:



Wildlife-Birds



Zosterops palpebrosus



Marops orientalis



Passer domesticus



Motacilla alba



Picnonotus cafer



Leftocoma zeylonica



Dicaeum erythrorhynchus



Dicrurus macrocercus



Motacilla alba



Temenucus pagodarum



Picnonotus cafer



Corvus macrorhynchos



Squirrels *funambulus*



Plate No. 5





Honey bees



Butterfly

Trees in College Campus



Terminalia catappa



Acacia auriculiformis



Ficus religiosa



Mimusops elengi



Azadirachta indica



Delonix regia

Plate No. 6





Alstonia scholaris.



Roystonea regia



Thuja occidentalis



Aegle marmelos



Callistemon lanceolatus



Samanea saman



Syzygium cumini



Ficus benghalensis



Anthocephalus cadamba



Tamarindus indica



Peltophorum pterocarpum



Casuarina equisetifolia

Plate No. 7





Hevea brasiliensis



Eucalyptus globules



Cycas circinalis



Dalbergia sisso



Polyalthia longifolia



Ficus racemosa

Plate No. 8



7. NOISE POLLUTION MANAGEMENT

A. Silence zones in college:

To control the noise pollution in the campus of the college, the silence zones are identified and various boards of slogans and symbols (keep silence, silence zone) are displayed at the places like library, classroom, office etc. These boards are creating awareness among the teachers and students to maintain silence in the campus.

Display boards at-

Location	Display board
Library	
Auditorium	
Classroom	
Laboratory	



B. Controlling classroom noise pollution:

To control noise pollution in the classroom, every classroom has wide windows. Wide windows help to reduce echoes and maintain noise pollution. Also, there is buffer zone of vegetation cover and open space between the classroom and compound wall of the college. It helps in lowering the noise pollution during teaching.

Noise pollution control in auditorium and Photo studio of the college:

The walls of auditorium and photo studio of the college are made from sound proof material. Therefore, during any programme the sound do not reflects and do not creates echoes.

C. Noise control during any programme in college:

The college has one huge gate for entry and exit of students. It is continuously monitored by the security guards. Entire campus, all class rooms, library & auditorium are under CCTV surveillance. This helps to keep the entire campus noise-free. In addition to this, security guards and members of Discipline Committee ensure smooth entry and exit of students without any noise and nuisance.



D. Controlling entry and exit of students and their discipline monitoring.

Our college has a huge main gate & another small gate in back-side of administrative building. During the IQAC Youth Festival, National & International Conferences, Workshops, Competitions, we use the main gate through which the students can come and go easily. Main gate has been divided into two gates, one for entry and other for exit. This helps to avoid the possible chaos during rush hours.

Besides, main road in the campus is provided with two foot-paths. Students are instructed to use right side foot-path by girls and left one by boys. This helps to avoid possible chaos during rush-hours.



We have the entry register for the visitors visiting our college. They have to register their name, time of entry and exit at the gate and then they are allowed to enter/leave the campus.

We have hired the security agency. Personnel of this agency in association with discipline committee of the college take care of all the security aspects including discipline in the campus. For this purpose, 10-15 security guards are in action every day including holidays.

E. No pressure horns for vehicle:

Our college staff members and students do not use pressure horns and is not permitted to the students.



8. HUMAN AND SAFETY MANAGAMENT

A. Group insurance for staff and students:

To ensure the safety of the staff members, college has adopted the group insurance and accident insurance scheme. At the time of admission, as per guidelines of University, provision of group insurance to students is also in practice. Many students have been benefitted with this scheme in the past.

B. Periodic health check-up:

College organizes periodic health checkup for the students and the staff every year in association with Niramay Medical Foundation, Baramati. For this purpose, we have MoU with Niramay Medical Foundation, Baramati. As a part of this MoU, our staff members also enjoy concessions in medical charges in the hospital run by this foundation. Besides, as per guidelines of UGC and University, health check up is compulsory to First Year UG & PG Students.

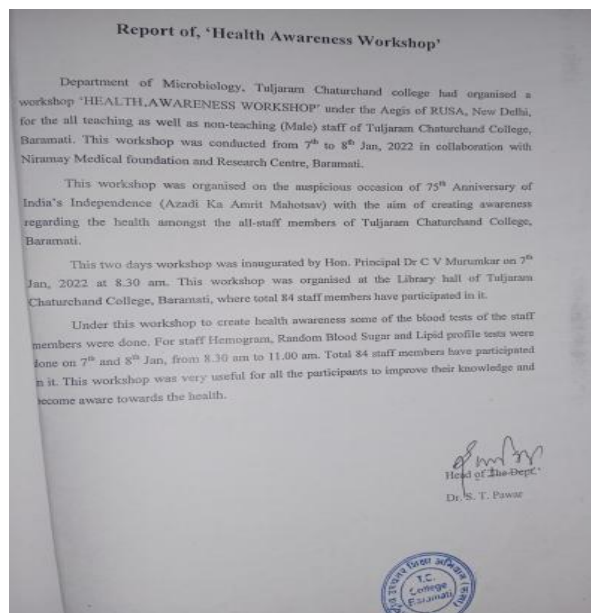
Department of Microbiology arrange check-up drives of various medical parameters like hemoglobin, Blood group, Blood Sugar, Blood Pressure, etc. for

Staff on various occasions like World Health Day, IQAC festival, etc. College also organizes the blood donation camps in association with Chandu Kaka Saraf Blood Bank, Baramati.

College organized the blood donation camp in association with HDFC Bank and Alumni association of T.C. College, Baramati on 16/12/2022. In this camp 86 bottles of blood were collected. The certificates were distributed among all blood donors.



Blood Donation Camp on 16/12/2022



Health Awareness workshop organized by Microbiology Department on 25/11/2011





College has Counseling cell run by department of Psychology



Covid- 19 Vaccination at College





Covid- 19 100 % Vaccination at Ajangaon

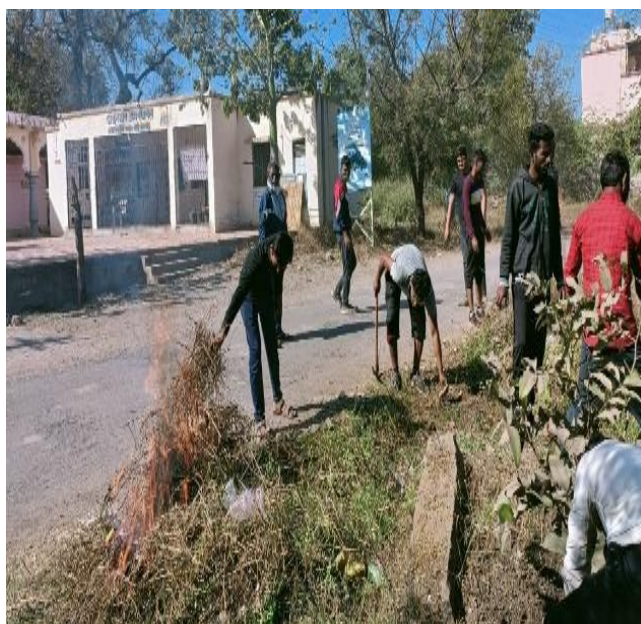


Covid Antigen – test



C. Awareness campaign on human health:

College organizes Guest lectures, Workshops for Staff & Students to increase awareness about their health. also NSS/NCC/Cultural Unit Creates the Awareness with help of Street-plays, Rallies etc. Every year NSS unit organizes a camp in nearby villages and plans to clean the village campus and various lectures are organized to create Awareness among villagers.



Gram Swachatta At Anjangaon by NSS students



Vaccination Drive (Puls Polio immunation)





Street Play team with Winning Trophy by NSS students

Department of Zoology,
30 Oct. 2021

To,
The Principal,
Tuljaram Chaturchand College of Arts, Science & Commerce,
Baramati.

Sub: Report of the guest lecture organised under Women Empowerment Programme.

Respected Sir,

On the occasion of World Breast Cancer Month, department of Zoology had organised a guest lecture on Breast Cancer Awareness. This lecture was aimed at increasing the awareness among girl students & women staff members of our college. The said lecture was arranged under the Women Empowerment Programme in online mode on Google Meet; on 30th October 2021.

The resource person for this lecture was Dr. Aruna Shah-Karad; Chief surgeon, MGM-Tulip Breast Cancer Center, Aurangabad.

I express deep sense of gratitude towards you for permitting us to arrange this lecture and extending all necessary help.

This lecture was attended by 183 girl students, 21 women staff of our college and 14 women from society. Total participants were 218. I am submitting this report for your perusal.

Thanking You,

Yours Sincerely,

(Signature)
Head
Department of Zoology
Tuljaram Chaturchand College
Baramati-413102 Dist. Pune(M.S.)

स्तन कर्करोगाचे प्रमाण

8 स्त्रियांपैकी 1	- अमेरिका
10 स्त्रियांपैकी 1	- युरोप
20 स्त्रियांमध्ये 1	- भारत (शहरी)
65 स्त्रियांमध्ये 1	- भारत (ग्रामीण)

Apprx. Lifetime incidence

Aruna Karad

Webinar on Breast Cancer organized by Zoology Department on 30/10/2021



D. Sanitary napkin-vending machines in ladies room:

These are available in girl's Hostel & Girls common room. The use of sanitary napkins is very important for girl students and ladies staff for maintaining their health hygiene.

E. Yoga / Meditation for staff:

College campus provides the facilities of indoor and outdoor stadium for the students, staff and the citizens of Baramati. Our sports faculty provides proper guidance and we are motivated to do the daily exercise of Yoga / Meditation in the college.

On 21st June 2022 International YOGA Day was celebrated at gymkhana. All teaching and non-teaching member, student were participated actively. Prof. R. D. Jagtap give a training of Asanas, Pranayama and meditation. also gives speech on Yoga & health. He explains the importance & yoga for healthy & free life also exhibited different poses in yoga.



F. Awareness campaign for Society:

NSS, NCC & Cultural units of our college regularly arrange street-plays and rallies for increasing awareness in society on Dengue and other diseases. Besides, awareness campaigns against communicable diseases like AIDS, TB, etc. are conducted in coordination with Baramati Municipal Corporation. College also tries to increase the awareness on such and other social issues through competitions like poster-presentation, wallpapers, etc. Our college staff actively participated in Covid- 19 survey organized by Baramati Nagarpalika as per direction of state government. Our students also participated in Covid- 19 awareness, cleanliness programmes in different villages.





Yoga training by Dr. R.D.Jagtap at Klamb- walchandnagar on 14/11/2022



Distribution of Sanitizer



Police Mitra

Helping Police for maintaining social distance





Covid -19 disaster



Prohibition Awareness poster

G. Arranging Blood donation camps:

The NCC, NSS & Gymkhana unit of Tuljaram Chaturchand College of Arts, Science & Commerce, Baramati organizes blood donation camps in association with Niramay Medical Foundation & Chandu Kaka Saraf Blood Bank.

College organized the blood donation camp in association with HDFC Bank and Alumni association of T.C. College, Baramati on 16/12/2022. In this camp 86 bottles of blood were collected. The certificates were distributed among all blood donors.



H. Fire safety:

Tuljaram Chaturchand College of Arts, Science & Commerce, Baramati is having awareness & safety facility. We have about 23 fire extinguishers all across College. Fire extinguishers are fixed in the Prashasan Bhavan (Administrative Building), library, Store, Jr. College and all science departments of the college for safety purpose. Also hose reels, placed in B.Voc. building & Prerna building in college for safety.



I. SOP's on safety in laboratory and first aid box:

All the laboratories are equipped with SOP's, Do's Don't' for the laboratory safety. The College conducted regularly Disaster Management Workshop to trained students for first aid and emergency treatment in various Disaster situations. First aid boxes are fixed in administrative office and indoor stadium & all laboratories of the college.



Do's and Don'ts in laboratories

Do's:

1. Do take a safety training course before beginning any work in the lab.
2. Do fill out an experimental registration form, have it signed by your supervisor and approved by the safety committee before beginning any work that includes computer work.
3. Do wear appropriate safety attire when in the lab - safety goggles, lab coat, etc
4. Do use the buddy system when working in the lab alone
5. Do keep your lab clean and free of clutter
6. Do use proper labeling
7. Do maintain good lab cleanliness - It's for your own safety and as well as for other
8. Do practice fire safety
9. Do handle glassware safely
10. Do wear gloves
11. Do wash your own glassware after your experiment
12. Do unplug the plugs after use of electrical instruments
13. Do clean up after using any glassware or equipment
14. Do leave the lab cleaner than you found it

Don'ts:

1. Do not begin any work until your form has been approved by the safety committee.
2. Do not wear open-toed shoes (sandals) in the lab.
3. Do not eat or drink in the lab
4. Do not keep the water tap running/ don't waste water
5. Do not touch chemicals with bare hands
6. Don't touch sterilized glassware without cleaning your hands

J. Emergency phone numbers:

All the emergency phone numbers are displayed at the entrance.

Sr. No.	Office	Contact No.
1.	Principal	9850640140
1.	Office of the College	02112-222405
2.	Deshpande Hospital	02112-2228982
3.	Baramati Police Station	100 / 02112-224333
4.	Fire Brigade	101 / 02112-222493
5.	Ambulance BNP	02112-222307
6.	Bus Stand	02112-222236
7.	Ladies Hostel Rector	8381034972/9763898935
8.	Baramati Nagar Palika	02112-221307
9.	Security(Gosavi)	9763850810
10.	Baramati Railway Station	02112-222383
11.	MSEB Enquiry	02112-223338
12.	Baramati Post Office	02112-229555
13.	Silver Jubilee Civil Hospital	02112- 221550

K. Controlled area for storage of hazardous chemicals:

Instructions -

- **Safety work instruction when using hazardous chemicals**

- While using hazardous chemicals Don't eat, drink, food beverages & wait until your work is done. You need wash your hands clean & neat.
- Make sure you know where the nearest firefighting equipment is located.
- The Hazardous substances should always be in accordance with the M.S.D.S. specification.
- Only use the product for its intended purpose never misuses the product for anything other than its intended purpose.

- **Personal chemical safety rules:**

- Wear gloves & protective glasses (Safety goggles) wherever necessary while handling hazardous chemicals.
- Follow instructor's guidelines.
- Proper disposal of chemical wastes.
- Strict use of apron / lab-coat in the laboratory.
- Strict use of safe-shoes.



9. SOIL POLLUTION MANAGEMENT:

A. Vermi-compost unit in College:

Use of Bio-fertilizers is eco-friendly and economy method to raise the plants in natural habitats. In connection with this, our college has established vermi-composting unit in the campus. Biodegradable wastes like garden foliage, waste food, etc. are decomposed in these units to produce good quality vermin-compost. This compost is used in the college garden.



Awareness of biofertilizer in Society



Saam TV Marathi Interview : Awareness on Setting of Vermicomposting Project



Biofertilizer Videos by Dr S. Mali

<https://www.youtube.com/J8qJETIwl7k>

<https://www.youtube.com/watch?v=wMqscLMxQzQ>

B. Effluent Treatment Plant (ETP) –

- Our college has a facility of effluent treatment plant (ETP) for effluent from Chemistry, Botany ,Zoology ,Microbiology department Effluent collecting tank filled completely it is taken for processing. The effluent is stirred with overhead electric motor and mixing with a solution of potash alum for coagulation. Then a solution of calcium hydroxide is added to adjust the pH in the range of 6-7. After adjusting the pH, effluent is lifted in an overhead tank for coagulation and sedimentation for 4 - 5 hours.
- After 5 hours settlement, the sludge settled down at the bottom is taken in a separating tank and supernatant liquid is collected in another tank and mixed with the solution of sodium-oxy-chloride as germicide.
- This liquid is allowed to pass through two filters having activated charcoal as molecular sieves. Resultant clean water is collected in another tank and used for gardening.





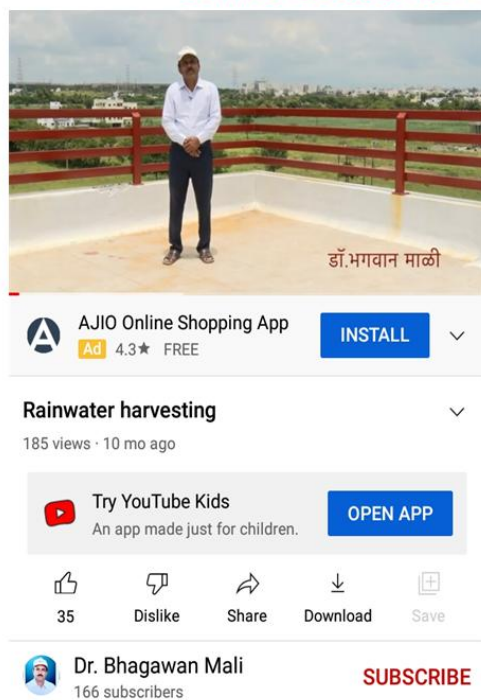
C. Rain water harvesting:

Our college is having rain water harvesting system to conserve the rain water. The earth water level is increased with Rain water harvesting which helped to have water to our college bore well. It increases natural storage of water, and helps the college in getting water for various purposes.

The college has established a rainwater harvesting unit in the year 2015 with the capacity of 3, 00,000 liters. This underground plant is next to the Department of Microbiology. Besides, the new buildings like B.Voc, and Prerana building are also equipped with rain water harvesting facility. The Prerana building has the catchment area of 1754 M² and the B.Voc. has of 1200 M². This catchment area will help to harvest substantial quantity of water that will help the campus to be self reliant to some extent for water requirement.



Awareness on Rainwater Harvesting



Rain water harvesting workshop by Environmental science Department on 11/03/22

The NSS unit of our college has conducted special winter camp and undertaken water harvesting programmes in an adopted village Anjangaon. It helped to enhance the groundwater level at that place.





NSS volunteers participated in Special summer camp arranged at village Anjangaon, Tal. Baramati, Dist. Pune

Total Supply and Consumption of Water by Campus

Source	Quantity Supplied (Liters)/Year	% of Supply/Year
Well	90,75,000	22.5%
Bore well	2,25,70,000	55%
BMC	90,05,000	22.5%

Table No. 8: Water consumption

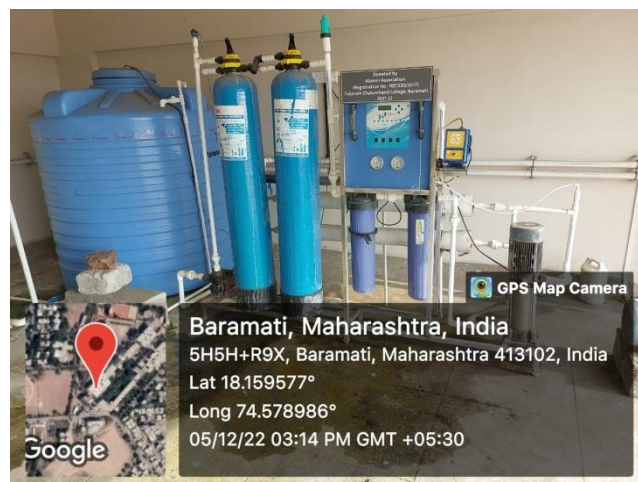
Purpose of Consumption – Drinking water, Toilets, Laboratories, Bathing and Toilet water for Hostels, Irrigation for college garden etc.

Water Purifiers from College -

Sr. No.	Place	RO/UV	Number	Capacity
1	Administrative Building	RO	2	50 X 2 = 100 lit.
2	Junior College	RO	4	50 X 4 = 200 lit.
3	B.Voc. Building	RO	2	50 X 2 = 100 lit.
4	Ladies Room	RO	1	50 lit.
4	Jeevraj Auditorium	RO	1	50 lit.
5	Gymkhana	RO	1	50 lit.
6	Chemistry Dept	UV	1	-
7	Library	UV	1	-
8	MBA Hostel	RO	1	50 lit.
9	Hostels	UV	7	-
10	Prerana Building	RO	1	500 Lit.

Table No. 9: Details of Water purifiers





D. Plastic free environment:

Attempt of our college is to keep the campus free from plastic as much as possible. We have increased the awareness amongst students and staff members regarding the same by displaying the boards and by conducting various programmes.

Clean Plastic Collection Programme:

This programme is started from 27/08/2022, 11.30. This is inaugurated by auspicious hand of respected Prin. Dr. C.V. Murumkar. Clean plastic is collected in the boxes and then it is sending for the recycling purpose. It will help to reduce the plastic content and helping to create a plastic free environment. This is environment awareness related programme. It help to aware about plastic free campus



10. OTHER SECTORS FOR ENVIRONMENT MANAGEMENT:

Three-tier approach of waste management



A. Waste management:

Chemicals and e-waste

College has a facility of ETP plant for effluent from Chemistry, Botany, Zoology, Microbiology department.

e-waste –

- E-Waste materials are kept in a separate store-room with a dead stock register.
- All the departments are instructed to submit the information of the damaged or out-dated computers, CDs and other e-equipments.
- These e-waste equipments are sent to the college central store.
- Sorting of e-waste is done by central store.
- These e-equipments are sold out by means of a tendering process.

E-Waste Campaign in association with TATA Croma

Date: 11/03/2022

Department of B.Voc Retail Management organized E-waste campaign in our college. The purpose of this Corporate Social Responsibility campaigning was to students get the knowledge of proper disposal of E-Waste. Through this campaign, we promoted 3 R's (i.e. Reuse, Recycle and Reduce). So by joining this campaign we can make our mother earth is healthy and we contributed towards economic, social and environmental development that creates positive impact on society at large.

Students engaged themselves in convincing e-waste depositors and collected numerous products from students and staffs such as charger, headphone, radio, mobiles, monitors, DVD, Speakers etc.

This does not end here; they have something that will act as a catalyst for our participation in this campaign. Croma promised that they will plant a tree for every e-waste we gave to them plus a Rs. 500/- redeemable voucher that can be redeemed in TATA Croma store with proof that they gave us a certificates for participation of each contributors.



Sr. No.	Department						
		Computer	Printer	Laptop	LCD Projector	Smart Board	Xerox machine
1	Computer Science	205	7	4	14	1	-
2	Physics	14	3	-	2	1	
3	Chemistry	8	3	1	-	-	-
4	Mathematics	3	2	1	-	-	-
5	Statistics	TC=48 PC=07 Server=01	9	8	2	1	-
6	Botany	9	3	-	4	1	-
7	Zoology	5	2	-	2	1	-
8	Microbiology	5	2	1	2	1	-
9	Library	27	2	-	-	-	-
10	Library Science	2	1	-	-	-	-
11	Electronics	20	2	-	1	1	-
12	Commerce	31	3	-	3	1	-
13	Journalism	5	1	-	1	-	-
14	Administration	44	12	2	1	-	1
15	History	2	1	-	-	-	-
16	Psychology	2	1	-	1	-	-
17	English	4	1	-	-	-	-
18	Geography	2	2	-	1	-	-
19	Economics	5	1	-	1	-	-
20	Marathi	2	1	-	-	-	-
21	Hindi	2	1	-	-	-	-
22	Defence	2	1	-	-	-	-
23	Sociology	4	1	-	-	-	-
24	Political science	3	1	-	-	-	-
25	BBA	3	1	-	1	-	-
26	BBA (C.A.)	5	1	0	1	0	0
27	Food Processing	4	1	-	1	-	-
28	Dairy Technology	1	1	-	-	-	-
29	Retail management	31	1	3	3	-	-
30	CIAR	1	1	-	-	-	-
31	CFC	4	-	-	1	1	-
32	store	3	2	-	-	-	-
33	Exam Section	1	1				4
	TOTAL	PC-466 TC-48	72	20	32	09	05

Table No. 10: List of computers and printers in college.

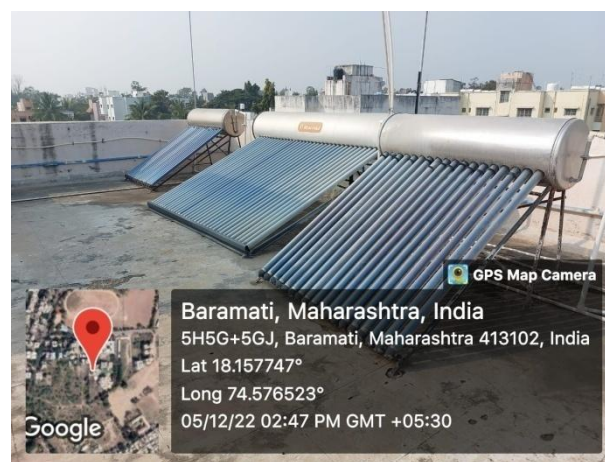
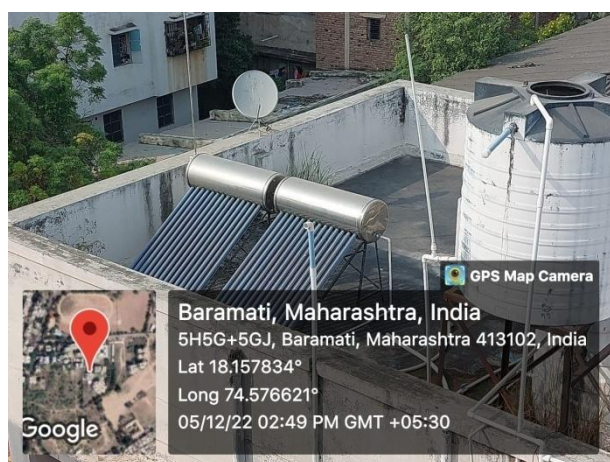


B. Use of solar energy –Solar water heaters in Hostels, Solar Lighting

A) Solar water Heater in Ladies Hostels:

Sr. No.	Details	Company	Quantity	Capacity
1	New Hostel	Racold Make	12 x 500 ltr	6000 ltr
2	A wing (Old)	SOLARE	02 x 500 ltr	1000 ltr
3	B wing (Old)	SOLARE	02 x 500 ltr	1000 ltr
4	C wing (Old)	SOLARE	04 x 500 ltr	2000 ltr
5	D wing (Old)	SOLARE	04 x 500 ltr	2000 ltr

Table No. 11: Details of Solar water Heater in Ladies Hostels.



Solar Water Heaters installed in College campus



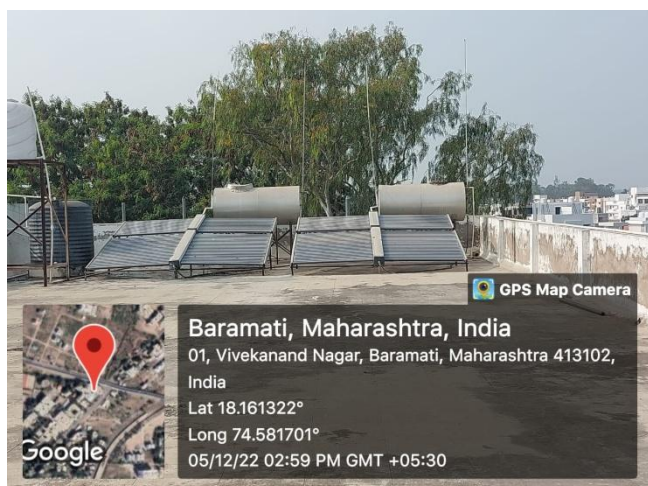
A) Photovoltaic Panel - Administration building

Sr. No.	Particulars	Specifications	Quantity	Capacity
1	Tata Power Solar make	Model No. TP255MBZ-H	40 x 250 W	10 KW
2	MAKE: Tata Power Solar	Polycrystalline 250wP-320Wp range Solar PV module 10Kwp (Make: Delta Invertor 10KVP)	32	10 Kwp

Table No. 12: Details of Photovoltaic Panel Administration building.



Administration Building: 10kW (net meter) (Approximately Rs-15,000/- saved per month)



Administration Building: 10kW



Physics Department: Solar panel=02 kW,

Sr. No.	Specifications	Quantity	Capacity
1	Titan Energy System	04 x 250 W 04 x 100 W 07 x 70 W 01 x 37 W	~2KW

Table No. 13: Details of Photovoltaic Panel – Physics Department



Wind Mill:

Sr. No.	Particulars	Specifications	Quantity	Capacity
1	Unitron Energy Make	3-blade (1.5 m) Height 35 ft above roof top	01	1.5 KW (6 units/day)

Table No. 14: Details of wind mill



C. Use of LED bulbs in college:

Principal's Office, Office of IQAC, Administrative Office, Library, Auditorium, Guest Rooms, Indoor Stadium, Ladies Common Room, Virtual Classrooms, Language Lab, Computer Labs, Science Lab, Departmental Offices, and all classrooms have LED bulbs to save energy.

Sr. No.	Particular	Total
1	Fluorescent Tube lights	122
2	Tube light LED (24W)	537
3	LED light (22W)	186
4	LED light (15W)	425
5	CFL	337
6	Tube light LED (36W)	95
7	HF Lamp	23
8	Tube LED (20W)	387
9	Star surface light (18W)	6
10	LED Star surface light (12W)	50
11	LED Panel square (12W)	219

Table No. 15: List of tube-lights and bulbs.

D. Conducting energy audit:

Last energy audit was conducted for 2019-20. In near future, we are about to conduct energy audit of our college. It will help us in maintaining our energy use in the college campus.

E. Dustbins in the premises:

Dust-bins have been kept in the college at several places. Waste collected in those bins is disposed-off at regular intervals with the help of garbage-disposal vans of the municipality.

Each laboratory and department is provided with dustbins. This helps to maintain the campus garbage-free.

Approximately, 255 dust bins are in use in the college campus.





F. Waste control in canteen:

There are two types of waste

- Dry waste
- Wet waste

Dry waste –

- Non-biodegradable material such as Plastic wrappers and bags, broken glass pieces, dishes, etc.
- Biodegradable material such as Paper cups, Paper dishes etc.

Dry waste is collected by waste pick-up van.

Wet waste –

Wet Waste especially from kitchen, such as vegetable refuses; food scraps etc. are disposed-off in biogas and Vermi-compost plant.

Biogas Plant (Kitchen waste Management Plant) –

Establishment Year – June 2013

Feeding Kitchen Waste – 40 Kg./Day

Gas Generation – 3 Cylinders or 45 kg/Month

Cost – Rs. 5,72,785/-





Biogas Unit

G. No uses of plastic in canteen:

College canteen uses paper plates& cups, newspapers, utensils so as to control the uses of plastic in the college campus. It has helped in keeping the campus plastic free.

H. Use of dust proof chalks:

All the classrooms and laboratories are fitted with green and white boards with dust free chalks and marker pens.

I. Minimum use of Photocopy/printing:

In college Maximum data is converted into soft copies and procedures are digitalized which minimizes the use of printing papers. We also put warning stickers on each Photocopy/ Printing machine to use. The maximum working procedures are paperless. We take the already one sided Photocopy papers in use to avoid the maximum use of papers.



11. Interpretation and Outcome of the Audit- SWOT Analysis

Strengths, weaknesses, opportunities and threats (SWOT) analysis is a standard tool in decision-making and planning. It is an efficient method for identification and analysis of strong and weak points and for examining the opportunities and threats in a certain domain. Strengths and weaknesses of a system are determined by internal elements whereas external forces dictate opportunities and threats. Advantages of SWOT analysis include simplicity in understanding, ease in use, and efficiency. It is recognized that if correctly applied, SWOT is an appropriate technique for identification of recommendations for organizations. In the given case, SWOT analysis was conducted to analyze the existing gaps and to prepare a comprehensive environmental management plan for the College.

A thorough assessment of the existing situation was conducted through the various parameters defined for SWOT analysis and the opportunities and weaknesses were then built into the plan. This analysis helped to provide a logical framework for analysis of the given situation and design strategies and tactics that were in tandem with accessible resources as well as technical competency. Through this analysis, the team was able to account for the existing environment-friendly initiatives at the college, and prepare a plan that will benefit in planning the proper use of resources in future.

It has been used in this given study with an aim to see how the EMS to be implemented should be shaped in order to take into account the existing concerns related to environment.

SWOT analysis has been conducted based on the initial environmental review and results show that the college has a lot of strengths which it can build upon during implementation of the EMP. Weaknesses and threats have also been identified for which remedial action can be taken through the EMP. The SWOT analysis serves as the foundation for drafting the environment policy of the Tulajaram Chaturchand Arts, Science and Commerce College, Baramati.



Strength, Weaknesses, Opportunities and Threats Analysis (SWOT)

Domain	Strength	Weaknesses	Opportunities	Threats
Green Office (Environmental awareness program)	College engaged in environmental awareness programs for staff and students by delivering expert lectures, street plays, poster & model Presentation. Institute conducts environmental awareness programs amongst the students and society through NSS, NCC and cultural unit.	Partial establishment of Green Office concept.	Green Audit can be done every year. Full establishment of Green Office. The blue print of five years eco-friendly campus plan to be prepared.	
Domain	Strength	Weaknesses	Opportunities	Threats
Legislation/ laws	Institute is following all necessary laws and ethics in context to environment protection.		Green Office concept may help in this regard.	
Domain	Strength	Weaknesses	Opportunities	Threats
Energy	We use energy efficient systems, Energy-saving practices like use of natural light, LED lamps, renewable energy like solar, wind power, biogas unit. All buildings of campus are naturally well ventilated & illuminated. Building design prevents heating during summer. Naturally operating roof-top exhausts are installed wherever necessary.	CO ₂ emission due to consumption of energy has not been taken into account.	Maximum utilization of renewable energy. Complete replacement of CFL by LED bulbs.	Use of fuel-powered electricity generator during power-outage hours causes air pollution.

Domain	Strength	Weaknesses	Opportunities	Threats
Water	We have rainwater harvesting system with good capacity. Institute is providing drinking water to students and staff purified with RO system and cooled with water coolers.	Partial availability of waste water management. We do not have water-recycling facility at our hostels.	The wastewater treatment facility can be developed. Waste water to be used for landscaping purpose. Water consumption monitoring system may be installed at every node. Use of IR water-purifiers instead of RO based purifiers.	Baramati is located in rain-shadow region. Due to less rain-fall, water shortage is a constant threat in common.
Domain	Strength	Weaknesses	Opportunities	Threats
Waste	We have ETP installed to treat waste water generated in chemistry, botany and zoology laboratory Solid waste is decomposed in the form of vermi-compost and biogas. Maximum reuse of papers is in practice. Waste paper is sold to the agencies with assurance of recycling	No availability of treating the bio-waste water generated in microbiology laboratory.	Vermi-compost plant can be operated on large scale Waste segregation can be carried out and paper waste generated at campus may be recycled. Concept of paperless administration may be implemented as e-governance policy.	Accidental leakage/spill of hazardous waste from microbiology laboratories may cause some problems.
Domain	Strength	Weaknesses	Opportunities	Threats
Biodiversity	Out of 38 acres of campus 12 acres are under canopy Institution has developed lush green campus by planting large number of plants around 713 plants.	Plantation is not adequate as compared to carbon foot print	Concept of green roof can be implemented in the Campus. Development of Biodiversity park, hanging garden and seed & gene bank	Limited space availability for plantation in proportion of increasing number of students. Due to this,

	Plantation of the campus absorbs around 227.62 tons of CO₂ emitted by various sources. Bird nesting sites, fernery and medicinal plant garden has been established. We celebrate the birthdays as well as welcome the guests by offering them plantlets/saplings. On occasion of inauguration of any programme, we water the potted plants instead of lighting the oil-burning diya. We have established the butterfly garden in which huge variety of butterflies is attracted due to the nectar and host plants.	Non availability of additional space for plantation	Indigenous plants should be planted on large scale	CO ₂ sequestering cannot be done to the expected limit.
Domain	Strength	Weaknesses	Opportunities	Threats
Air quality & transportation	We have satisfactory plantation in the campus that help to sequester the emitted CO₂ to the maximum limit. Besides, our botanical garden has oxygen park where we have large number of oxygen emitting plants like holy basil, croton, etc.	Staff and students use fuel powered individual vehicles. Lack of public transportation system from bus-stand to college.	Car & bike sharing, maximum use of bicycle, and observing no-vehicle day at regular intervals PUC check-up camp can be arranged at regular intervals.	Increasing tendency of students towards use of fuel-powered vehicles is a measure threat. This may lead to increased CO ₂ emission.

			Attempts to start the public transport system between bus-stand and college. Allowing only the vehicles with BS-IV stage compliance in the campus.	Use of fuel-powered electricity generator during power-outage hours causes air pollution.
Domain	Strength	Weaknesses	Opportunities	Threats
Community	NSS unit of the college arranges winter-camps in various adopted villages from Baramati tehsil and undertakes various programmes like tree-plantation, cleanliness drive, organic farming, and health awareness camps etc. which are helping in improving the environment value of those villages. NSS volunteers participate in annual pilgrimage event- 'Pandharpur-vaari' and try to increase the awareness about cleanliness, ill-effects of plastic, addiction, etc. through street-plays. NSS and NCC volunteers also help the pilgrims of 'Pandharpur-vaari' to use the bio-toilets made available by government.	Number of villages adopted by college appears to be less as compared to the number of students enrolled in college.	Adopting more villages under recently launched scheme- 'Unnat Bharat Abhiyaan' and trying to make more eco-friendly villages.	Students participating in such activities may suffer in their academic study-time.

	NSS volunteers and NCC cadets help the local police and public health department by arranging and participating in 'Road-safety' drives, Pulse-polio drive, blood-donation camps, etc. Adopting five villages under recently launched scheme- 'Unnat Bharat Abhiyaan' and trying to make more eco-friendly villages			
--	---	--	--	--



12. Future Plan

- Establishment of Green Office Concept.
- The blue-print of five-year plan should be prepared for eco-friendly campus

Environmental domains

Air management

- Appeal will be made to students and staff for maximum use of shared transportation facility and public transport.
- College will encourage the students & staff to use bicycles. 'Cycle-Day' will be observed with a frequency of once in a month.
- Tree plantation has been planned in nearby villages.
- Street-play will be arranged in association with cultural department of our college to increase the awareness against air pollution.
- As a part of students' project under the compulsory subject- Environmental Awareness, we are planning to allot the survey projects on various topics like use of chulha, eco-friendly agricultural practices, water, soil, air and noise pollution, etc. to the second year students of undergraduate program.

Noise Management

- Establishment of noise pollution measurement system in college.
- Use of microphones, ICT rooms will help in noise management.

Human Health and Safety

- Yoga/Meditation for staff/ Students at least once in a week
- Health centre will be established in the campus.
- Awareness campaign on human health & organ donation for students, society & Staff.
- Blood donation camps will be arranged on more occasions.
- BMI check up for students and staff.
- Conducting Fire Safety Audit
- Fire alarm in college campus.
- MoU with hospitals.



Soil /Water Pollution Management

- Implementation of water management and recycling program with full efficiency.
- Monitoring system for consumption of water can be installed at every node.
- Establishment of separate Plastic Dumping yard in college.

Energy management

- Quantitative targets would be undertaken for reduction in energy consumption.
- To adopt various energy saving policies such as Promoting use of renewable energy, five star rated energy saver equipments / instruments etc.
- Energy generation through installation of solar panels and wind mills will be undertaken.

Waste management

- Use of paper cups will be discouraged and people will be motivated to use their own mugs/cups instead of paper cups.
- Paper usage will be minimized in various ways. Double-sided printing option can be used at all terminals with access to printers.
- Communication will be encouraged through social media like whatsapp to minimize the paper use.
- Waste segregation will be carried out strictly; organic waste will be composted in-house (biological treatment has proposed for biodegradable waste) in future and the manure will be used for the gardens in the campus.
- E-waste management program can be implemented more effectively by various practices like e-paper office, use of ICT, single window system, etc.
- Dust-bins will be kept in each class-room.




Principal
Tuljaram Chaturchand College
Baramati