

JSS Academy of Higher Education & Research
(Deemed to be University) (Accredited A+ Grade by NAAC)

COMPENDIUM ON SDG-6

CLEAN WATER AND SANITATION

**Compendium of Activities in Achieving UN Sustainable
Development Goals**



2021-22

Table of Contents

Sl.No	Title	Page number
1.	ABOUT THE SDG 6	2
2.	ACTIVITIES ALIGNING TO SDG 6	3-4
3.	ACADEMIC ACTIVITIES RELATED TO SDG 6	5-6
4.	SUSTAINABLE WATER EXTRACTION TECHNOLOGY	7
5.	SAFE DRINKING WATER SUPPLY SYSTEM	8
6.	HAND HYGIENE	9-10
7.	WASTE MANAGEMENT	11-13
8.	OUTREACH ACTIVITIES	14-18
9.	UNIVERSITY'S APPROACH TOWARDS SDG 6	19-28
10.	SCIENTIFIC AND RESEARCH ACTIVITIES RELATED TO SDG 6	29-31
11.	PUBLICATION SUPPORTING SDG6	32



About the goal

Goal 6 calls for access to safe and affordable drinking water, sanitation facilities, and hygiene for all by 2030. Water resources are also critical for agriculture and industrial use, and therefore protecting and restoring water-related ecosystems is essential. The goal is aimed at -improving water quality by reducing pollution, substantially increasing water-use efficiency across all sectors, and strengthening the participation of local communities in improving water and sanitation management.

Access to clean water and sanitation facilities is a basic human right. Over 2 billion people in the world lack access to clean water that is free of health risks. Ending open defecation will require the provision of toilets and sanitation for 2.6 billion people as well as behavioural change in the population. Safe drinking water and hygienic toilets protect people from disease and enable societies to be more economically productive and attend school and work without disrupting support education and employment. Goal 6 is closely linked with other SDGs, like progress in SDG 6 will improve health (SDG3) and improve school attendance, both of which contribute to alleviating poverty.

ACTIVITIES ALIGNING TO SDG 6



JSS Medical College and Hospital has a structured policy for green campus and maintenance of sanitation in the college and hospital premises.

Water conservation program

- Sensitizing the staff and students
- The students arriving on campus and at the hostels are sensitized about water conservation in their orientation meetings. Printed stickers/labels with the slogan 'Save Water' are fixed in strategic places of the college and hostels.
- Cutting back on car washing
- The vehicles on the campus are washed based on the real needs rather than regular washing to save water.
- Irrigation Techniques and Dual Flushing Systems
- The gardens are irrigated with sprinkler systems to save the wastage of water in plantations.

Recycle programs

- Green wastes, like tree and bush trimmings, are composted and reused for fertilizer and preparation composts.

- Food waste is also cut down by implementing self-serving of food by the students, so they aren't tempted to waste food. Further, the food remains are collected systematically and used for preparing composts manure in the dig wells which is used for gardening purposes. Hazardous solvent systems are recycled/disposed of safely.
- The wastewater from the utility areas of the hostels and the college are subjected to treatment before being flushed into the public drainage system.

Green Policy for the use of papers

- The college encourages the practices like double-sided printing and the usage of one-side papers for taking printouts.
- All the internal notifications and circulars are communicated in electronic formats (e-Tapaal).

Activities conducted aligning to Goal 6

Activities conducted aligning to Goal 6	
Curriculum	The curriculum is designed with subjects where concepts of safety and risk management, sewage treatment and bio medical waste management and treatment are introduced to students. Students practically learn the various concepts of waste management from an administrative point of view. Laws and regulations that are required for the management of the above concepts are also inculcated in the students.
Teaching & Learning	The concept of hospital postings is based on a work learning model where students are made to work in a real-time work environment to have hands-on experience. Students visit the sewage treatment plant and understand the process that takes place in the facility.

ACADEMIC ACTIVITIES RELATED TO SDG-6

For Undergraduates:

- **Visit Water purification plant:** Students of MBBS Phase III Part I are taken for a visit to a large-scale water purification center during their Community Medicine department posting. They learn about the purification techniques of water on a large scale, chlorination of water, and distribution of safe drinking water on a large scale. They also visit the Public Health laboratory on the premises of water works, where they learn about water quality surveillance.
- **Public Health laboratory at the Department of Community Medicine:** the MBBS students are taught about the identification of chlorine demand in water, different disinfectants used in water disinfection at the household level, and identification of the amount of residual chlorine using a chloroscope.
- **Hand Hygiene technique:** In the department of Microbiology the undergraduates are taught about hand washing techniques and the importance of hand hygiene.
- **Biomedical Waste Management:** In the department of Community Medicine and Microbiology, the students are taught practical skills of disposal, segregation, transport, and treatment of biomedical waste
- **Environment and Health:** The BSc Allied Health sciences students are taught for one complete semester on different aspects of environment affecting the health. Includes water purification, solid and liquid waste management, Biomedical Waste Management, Sewage treatment, Excreta disposal, etc.

For Postgraduates:

- **Water Surveillance:** the MD Postgraduates, Master in Public Health(MPH), and MSc Microbiology students are trained in regular water surveillance for detection of water quality assessment, fecal contamination of water, chlorine content, etc.
- **Stool examination:** the postgraduates are taught and assessed about stool examination techniques to identify the ova and cyst in the stool.
- **MTech in Health Science and Water Engineering:** Students from the Master of Technology are taught about water and related diseases



Vanivilas Water Works



Horrocks Apparatus

SUSTAINABLE WATER EXTRACTION TECHNOLOGY

Rainwater Harvesting

- Rainwater harvesting collection tank of 30,000 liters storage capacity.
- 10 no's of Groundwater & bore well recharge pits and infiltration tank of about 15,000 liters capacity.
- STP of 25 KLD capacity by using SWR technology has been installed for treating sewage & kitchen wastewater of PG Guest Hostel & the treated water is used for the gardening area developed surrounding the building.
- One tank of 10,000 liters capacity is made for reuse of RO rejected water for gardening purposes
- Water sprinklers are in place



The small-scale sewage treatment plant



Facility for Reverse Osmosis (RO)

SAFE DRINKING WATER SUPPLY SYSTEM FOR STAFF, STUDENTS AND PATIENTS



Safe drinking water supply at various places in Medical College and Hospital premises.

HAND HYGIENE

- i. Hand sanitizers are placed at various places in hospital, Medical College, and hostels with appropriate sanitizer dispensers placed.



Hand Sanitizer Dispensers at various places in hospital, Medical College & Hostel premises.

- ii. Hand washing technique: this is a skill taught to the undergraduate students and assessed on the appropriate technique of hand washing and the importance of hand hygiene in the prevention of the disease spread.

World Hand Hygiene Day 2022

World Hand Hygiene Day (WHHD) was observed every year on 5th May 2022. On account of this, the Hospital Infection Control Committee (HICC) of JSS Hospital on 5th May 2022 organized various activities to generate awareness about the importance of Hand Hygiene among health care professionals.

The activities were as listed bellow

- a. Quiz for nurses on Hand Hygiene
- b. Post Graduate quiz on Hand Hygiene
- c. Poster presentation on the theme of Hand Hygiene importance.

The prize distribution ceremony was organized for the winners in presence of the District Health Officer (DHO) and District Family Welfare Officer of Mysuru District.

JSS Hospital
M.G. Road, Mysuru-4

WORLD HAND HYGIENE DAY

We cordially invite you for the celebration of
"WORLD HAND HYGIENE DAY"
at SRCA on 5.5.2022, 2:30PM.

Chief Guest
Dr. Prasad K.T.
District Health Officer, Mysuru

Guest of Honor
Dr. Ravi P.
District Family Welfare Officer

Presided by
Dr. (Col.) M. Dayananda
Director, JSS Hospital

Special Invitees
Dr. H. Basavanna Gowdappa
Principal, JSSMC

Dr. Madhu C.P.
Medical Superintendent
JSS Hospital

Mrs. Janet Mathias
Chief of Nursing Services
JSS Hospital

Kindly request all Doctors & Staff to Grace the occasion

RSVP
Mr. Lokesh N.
Administrative Officer
JSS Hospital

Dr. Narayanasappa D
Chairperson, HICC
JSS Hospital

WHHD Program invitation



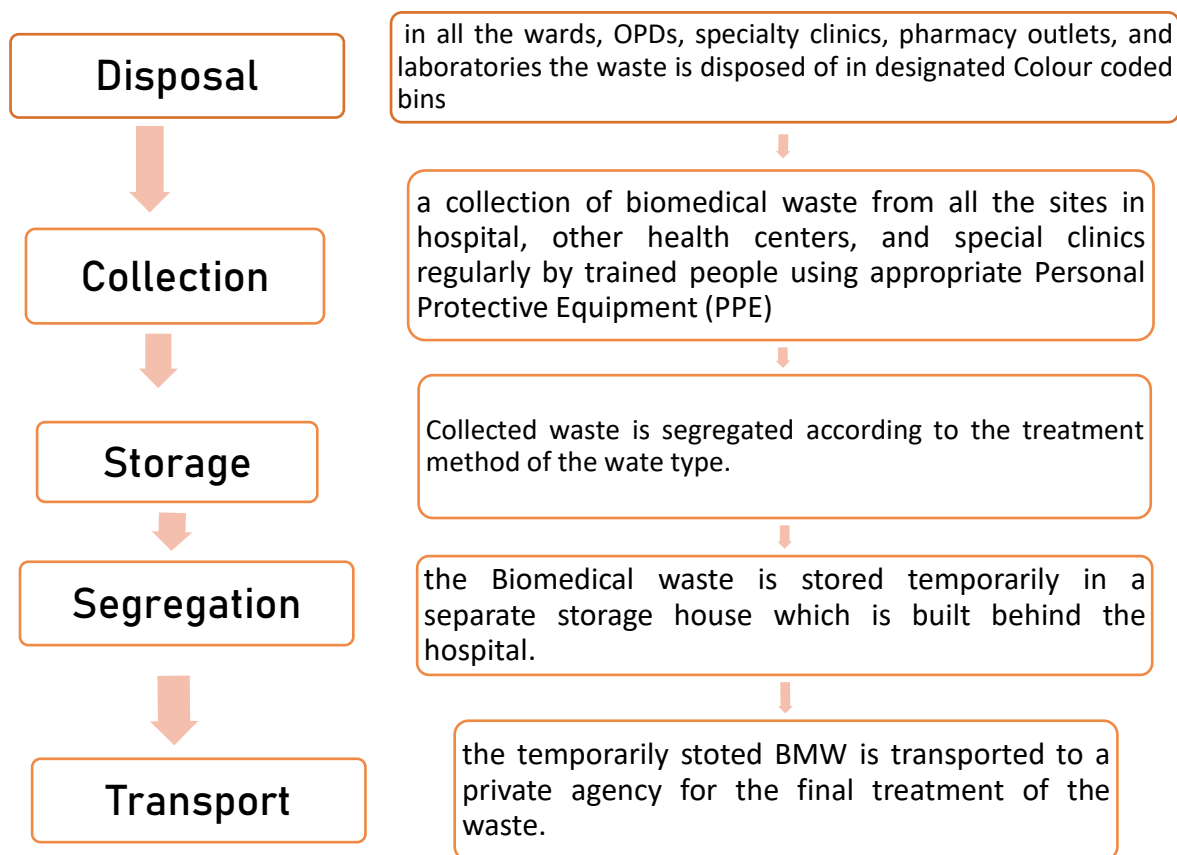
WASTE MANAGEMENT & POLICIES OF JSS MEDICAL COLLEGE

SUPPORTING SDG 6

I. Biomedical waste management

Biomedical waste management in the JSS hospital, Medical College, and allied health centers follows the Biomedical Waste Management Rules 2016.

Generated Biomedical waste in health centers follows the following step before it is treated.



The BMW waste treatment services are availed from a private agency M/s. Shree Consultants since 2003.

The JSS Hospital website displays month-wise how much BMW is generated from the hospital.

II. General waste

- Segregation and collection of dry and wet garbage are in practice.
- Color-coded dustbins are provided across the campus.
- Waste collection by municipal lorries regularly from all the sites.
- Swachh Sarvekshan posters are put up in various places in the hospital, medical college, and hostel premises.

III. Sanitary napkin disposal

At the girl's hostels of JSS Medical College, there is provision for safe disposal and treatment of sanitary napkins. Installed sanitary napkin incinerator in the hostels.



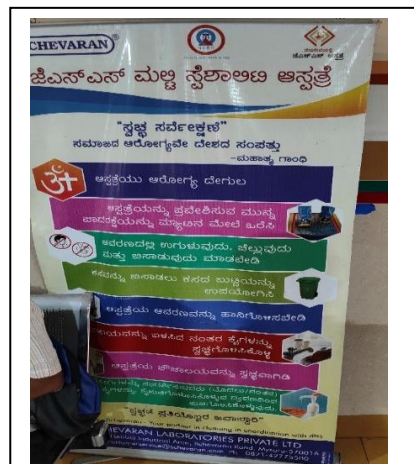
Color-coded dustbins and covers



Display of waste categories to the respective bins



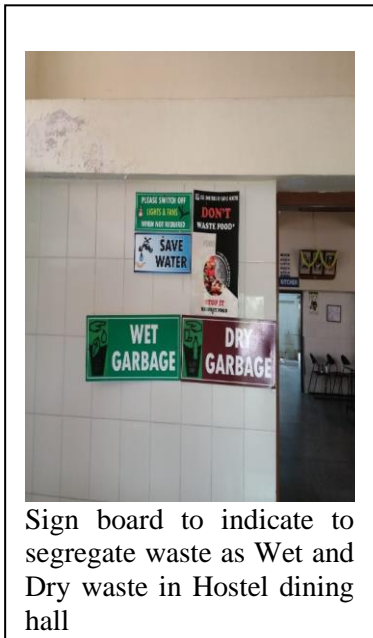
Sign-board on with using dustbin



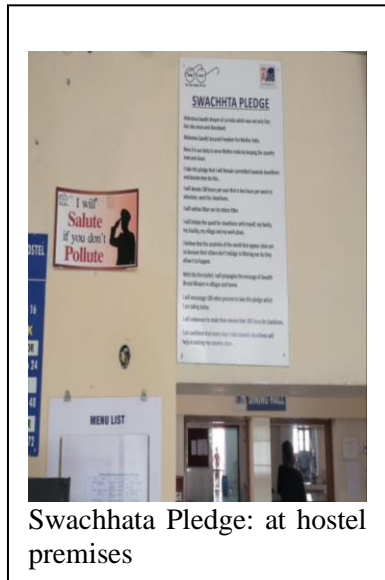
Swatch Sarvukshan Abhiya poster



Separate colour-coded dustbins for wet and dry waste



Sign board to indicate to segregate waste as Wet and Dry waste in Hostel dining hall



Swachhata Pledge: at hostel premises



Sanitary napkin Incinerator

IV. Liquid waste from laboratories.

The liquid waste generated from the clinical laboratories is disposed of safely by the hospital. there is an Effluent Treatment Plant (ETP) in the hospital to make wastewater from the hospital safe to dispose of in the general drainage system.

Separate soak pit is under construction. The pit will collect all the waste and drain water from the campus.



OUTREACH ACTIVITIES

Awareness is created among the community through Hygiene and sanitation model

A hexagon model is prepared which depicts the sanitation, personal hygiene, and steps of hand washing techniques. The model can be rotated and visualize different aspects of environmental sanitation and the method of sanitation barriers to prevent many communicable diseases. This model will be used in all the outreach activities where the community is educated about the importance of sanitation.



Hexagon Hygiene and Sanitation model for educating the community

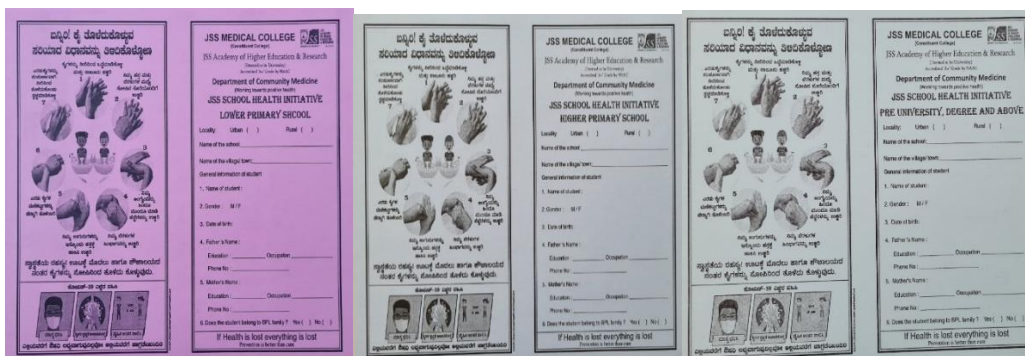
School Health Appraisal program

Every year around 12,000-15,000 school and college students' health appraisal is conducted by the Department of Community Medicine, JSS Medical College. During this appraisal program, there are separate health cards for primary school, middle and high school, and college students. These health cards also depict the pictorial message about hand washing techniques and personal hygiene methods.

The students are also educated about personal hygiene, menstrual hygiene, and environmental hygiene (school & domestic).

This year total 40 school based health education activities are conducted and among them more than 5000 children participated. The topics for health education include, personal hygiene, sanitation, mental health, substance abuse, physical exercises, non communicable disease prevention etc.

School children are taught on energy efficiency and clean energy, use of renewable energy resources, climate change and its impact, tree plantation etc.



Handwashing picture is depicted in School Health Appraisal cards

WORLD WATER DAY – 22-03-2022

The World Water day was celebrated by the students of School of Public Health on 22nd March, to raise awareness about the water. The class was decorated according to the theme and the students were dressed in colour as well as a blue-colored ribbon with quotes on world water day was given to all the students



JSS

blue

Events organised by the institution “Our Planet Our Earth”

Webinar on this year’s theme of World health day 2022 “Our planet our earth” was organized by the department of Public Health Dentistry. Guest speaker Dr. Manjunath B.C, Prof and Head, Post Graduate Institute of Dental Sciences, Rohtak, highlighted the need to protect our planet from climatic crisis, inadequate sanitation, tobacco epidemic and so on.



World Environment Day



Faculty of JSS Dental College and Hospital actively participated in World Environment Day 2021 which was observed on 9th June-2021. The programme was organized by NSS unit of JSS Dental College and Hospital. Saplings were distributed to general workers of the hospital and they were appraised about the importance of good environment, water and energy conservation.

Water Purification



Visit to water purification unit by undergraduate students to create awareness about clean water.

7. Creating awareness among local communities

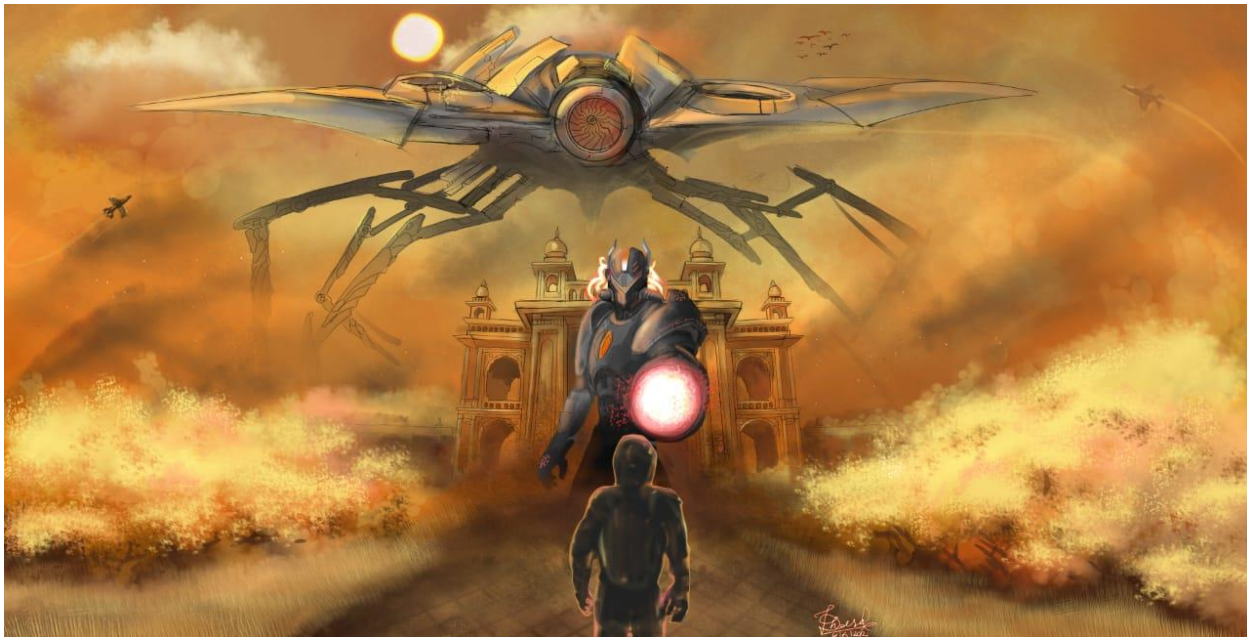
As a part of regular NSS activity, the local communities are approached regularly and participants from JSS college of Pharmacy, Mysuru interacts with villagers and residents of remote areas on multiple matters. Under routine camps of NSS, the activities related to clean water, sanitation, maintaining hygiene and appropriate use of water were carried out.

A guest lecture was conducted at the remote site (Majjigepura village, Belagola Hobli, Dist-Mandya) by an invited speaker Dr. H.P. Shivaraju, Assistant Professor, FLS, JSSAHER on 27-03-2022 as a part of NSS Special camping activities. The speaker interacted with the villagers on judicious use of water made aware of methods of ground water conservation and recharging of bore wells. The activity was coordinated by Dr. Gowrav M.P., Assistant professor and program officer for NSS at JSSCP Mysuru.



8. Creating awareness among students

8.1 As an awareness campaign, the students were motivated to participate in digital art competition during national pharmacy week celebration. The theme of the competition was “Save Water”. Students participated in the said event and Ms. Tenzin Dhasel of III B. Pharm won the prize.



Winner digital art during National Pharmacy week

Environment program in NSS camp-

In association with the faculty of Life sciences, the Department organized seven days annual NSS camp at Majjigepura village, Srirangapatna Taluka, Mandya District from 24.03.2022 to 30.03.2022

During the camp a special rally was arranged where students with placards highlighted the importance and ways of preserving and safeguarding water resources available.

Students also interacted with the villagers to understand their perspective on water conservation, their knowledge, and local measures followed by the village people.

A guest lecture was delivered by **Dr. Shivaraju**, on “**Conservation of Ground water resources**”, through videos.



UNIVERSITY'S APPROACH TOWARDS SDG 6

1. Maintenance of clean, green, and smart campus – waste segregation and planned disposal of waste through authorized agencies only

- The University supports green practices in all its initiatives. It has well-defined policies for its sustainable green practices which include its energy conservation policy, water conservation policy, transport policy, the SMART and Green campus policy and many such policies and practices that inculcate the importance of conserving the present for the future generations.

2. Provision of Safe drinking water at college premises.

- To provide quality care, healthcare facilities need to have a safe and accessible water supply this is well maintained at JSSDCH.

3. Sanitation and hygiene maintenance by the house keeping staff at college premises

- Clean and safe sanitation facilities; hand hygiene facilities at points of care and at toilets; and appropriate waste disposal systems are in place at JSSDCH.

4. Waste water treatment

- Infrastructure that supports water, sanitation, hygiene, and healthcare waste management practices helps prevent the spread of diseases within the healthcare facility and to the surrounding community.

5. Rain water harvesting

To meet the needs and sustainable management of fresh water, the rainwater harvesting, and utilization systems have been established in all the campuses of the university to aid towards the greater objectives of water management and conservation and increasing recharge of groundwater by capturing and storing rainwater, rainwater harvesting from rooftop run-offs and natural water bodies and the community development.

The below mentioned models are established in the various buildings based on the size of the building and the extent and topography of the land.

- Simple roof water collection systems - Most of the rooftop rainwater harvesting has been completed by constructing five water storage structures with a storage capacity of 1000 m³.
- Land surface catchments – a simple way of collecting rainwater by retaining the flows (including flood flows) of small creeks and streams in small storage reservoirs (on surface or underground) created by low-cost dams
- Collection of storm water – The surface runoff collected in storm water ponds/ reservoirs is subject to a wide variety of contaminants and every effort is made to keep these catchments clean.

6. Biomedical waste management in an appropriate manner

- JSS Dental College and Hospital gives utmost importance to controlling and prevention of infection in patients, visitors, healthcare providers and community by adopting appropriate safety measures.
- JSS Dental College and Hospital has an organized Infection Control Committee and Infection Control Team which formulates policies and measures aimed at reducing and eliminating infection risks to patients, housekeeping staff, visitors and to the environment.

7. Hand hygiene practice training and protocol displayed in all departments.

8. Field visit by III BDS students to water purification plant

9. Plastic-free campuses

10. The HEI actively organizes Swachh Bharat Abhiyan and creates awareness and consciousness amongst students.

11. The Institution also has included a subject Environmental Sciences in all courses as stipulated by UGC and organizes Environment Day and Water Day.

Provisions for Wastewater management, sewage treatment plant and rain water harvesting:

Existing Facility:

Waste management:

- Bio-medical waste management service from M/s. Shree Consultants is being availed since May 2003.
- Segregation and collection of dry and wet garbage.
- Colour coded dustbins are provided across the campus.

Water management: - Water sprinklers are in place.

Required Facility:

- Rainwater Harvesting
- Sewage Treatment Plant facilities to improve the ground water level and to use for gardening.
- An awareness camp is necessary to educate on segregating degradable & non-degradable wastes.
- All water pipes can be connected to a metric meter to have a data on daily water consumption.
- Identifying damaged pipes and sprinklers and replacing them with efficient ones can save water.

3. Existing facility for disposal of polluted and waste water

A dedicated facility for disposing waste water in designated sewage line is already exist in our premises, which prevents the entry of polluted water in to the water bodies. As shown in the images, this facility comprises of a storage tank of 30,000 litres equipped with 2 high pressure pumps to dispose the waste water in sewage line of Mysuru city corporation.

Also, a dedicated facility is created inside the campus to address the problem of waste water generated by the local community at the vicinity of our campus where no provision for the drainage is made. This is put in place to address better sanitation inside the campus and its surroundings.



Waste water storage facility



Storage tank (30,000 Litre)



Pumps for disposing waste water into the sewage line

4. Availability of free clean drinking water to students, staff and visitors:

The campus is equipped with 500 LPH RO water systems (02 No.) and 300 LPD RO water systems (03) to provide drinking water facility to students, staff and visitors at college campus, boys hostel and girls hostel. The RO water plants are subjected to periodic maintenance and quality testing being done periodically to ensure potability of water thus produced. Even the water from borewells are being subjected to periodic testing.

An external agency by the name CADD Solutions Technologies Pvt. Ltd. performs the testing of water from all sources for parameters as per APHA 23rd edition for chemical parameters and microbiological sampling to ensure potability of water. All sources of potable water are tested twice in a year

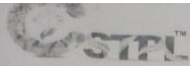
A few representative details are appended below:



RO (Reverse Osmosis) water purifier is made available in the campus.



- The water outlet from RO plant is collected separately and used for watering the plants in the garden.
- Awareness program on the usage of water, minimizing the usage and the importance of water as it is the elixir of life was clearly explained during the program.



TEST REPORT

1	Name and Address of the Customer	:	JSS College of Pharmacy Mysuru.
2	Sample collected by	:	Client
3	Sample Description	:	R O water - Collected at Boy's Hostel (2 ltr Polythene Bottle)
4	Sample Reference Number	:	CSTPL/Oct/521
5	Date of sample receipt	:	02.10.2021
6	Type of sampling	:	Grab Sampling
7	Date of Sample taken for analysis	:	04.10.2021
8	Date of Completion test	:	09.10.2021
9	Sampling Method adopted	:	NA
10	Environmental Condition during sampling	:	NA

Sl. No.	Parameters	Protocol as per APHA 23 rd Edition	Unit	Result	Standard IS 10500-2012	
					Requirement (Acceptable Limits)	Permissible Limits
1	pH @ 25°C	4500 H,B	----	7.98	6.5-8.5	No relaxation
2	Electrical Conductivity @ 25°C	2510-B	µs/cm	410	Not Specified	
3	Turbidity	2130 B	NTU	0.1	1 Max	5 Max
4	Calcium as Ca	3500- Ca	mg/L	49.6	75 Max	200 Max
5	Chloride as Cl	4500-Cl,B	mg/L	36.77	250 Max	1000 Max
6	Alkalinity as CaCO ₃	2320B	mg/L	170.88	200 Max	600 Max
7	Total Hardness as CaCO ₃	2340-C	mg/L	180.0	200 Max	600 Max
8	Magnesium as Mg	3500-Mg,B	mg/L	13.60	30 Max	100 Max
9	Boron as B	4500-B,B	mg/L	BDL (<0.1)	0.5 Max	1 Max
10	Sulphate as SO ₄	4500-SO ₄ ²⁻ E	mg/L	2.45	200 Max	400 Max
11	Fluoride as F	4500-F,D	mg/L	0.31	1.0 Max	1.5 Max
12	Iron as Fe	3500-Fe,B	mg/L	BDL (<0.02)	1.0 Max	No relaxation
13	Nitrate Nitrogen as NO ₃ -N	4500-NO ₃ ,E	mg/L	4.93	45 Max	No relaxation
14	Nitrite Nitrogen as NO ₂ -N	4500-NO ₂ ,B	mg/L	BDL (<0.1)	0.02 - 2	13
15	Total Dissolved Solids	2540 C	mg/L	266.50	500 Max	2000 Max
16	Residual Chlorine as Cl ₂	4500-Cl,B	mg/L	BDL (<0.1)	0.2	1
17	Total Suspended Solids	2540 D	mg/L	BDL (<1)	-	-

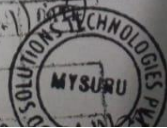
Note: BDL-Below Detection Level

Inference The analyzed values for above measured parameters are within the Acceptable limits. As per IS 10500:2017 Specification.

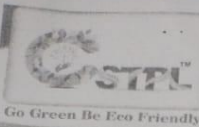
Note:

- The results listed above pertain only to the tested samples and applicable parameters.
- Samples which are degradable/unstable will be disposed immediately after testing and others will be disposed after 15 days from the date of issue of test report unless otherwise specified.
- Total liability of our laboratory limited to the invoiced amount.
- This report is not to be reproduced either wholly or in part and cannot be used as evidence in the court of law and should not be used in any advertising media without prior written permission. Subject to Mysore Jurisdiction.
- Sampling is not done by us unless otherwise specified. Any discrepancy in the test report should be notified within 15 days.
- For any complaints kindly register in our complaint Register maintained with customer service coordinator.

ANALYSED BY
 (Kavya)
 Chemist



AUTHORIZED SIGNATORY
 (Shivanand Shanabhogar)



Ref: CSTPL/ANAL/178/20-21
 Report No: 472

Page 1 of 1
 CSTPL/W/11/01
 Report Print Date: 10.03.2021

TEST REPORT

1	Name and Address of the Customer	:	JSS PHARMACY GIRLS HOSTEL Bannimantap, Mysuru
2	Sample collected by	:	Client
3	Sample Description	:	Cauvery Water (2 ltr Polythene Bottle)
4	Sample Reference Number	:	CSTPL/Mar/472
5	Date of sample receipt	:	02.03.2021
6	Type of sampling	:	Grab Sampling
7	Date of Sample taken for analysis	:	02.03.2021
8	Date of Completion test	:	09.03.2021
9	Sampling Method adopted	:	NA
10	Environmental Condition during sampling	:	NA

Sl. No.	Parameters	Protocol as per APHA 23 rd Edition	Unit	Result	Standard IS 10500-2012	
					Requirement (Acceptable Limits) Max	Permissible Limits Max
1	pH @ 25°C	4500 H,B	----	8.40	6.5-8.5	No relaxation
2	Electrical Conductivity @ 25°C	2510-B	µs/cm	1187.0	Not Specified	
3	Turbidity	2130 B	NTU	1	1	5
4	Alkalinity as CaCO ₃	2320B	mg/L	418.0	200	600
5	Calcium as Ca	3500- Ca	mg/L	92.0	75	200
6	Chloride as Cl	4500-Cl,B	mg/L	117.98	250	1000
7	Total Hardness as CaCO ₃	2340-C	mg/L	490.0	200	600
8	Magnesium as Mg	3500-Mg,B	mg/L	63.18	30	100
9	Boron as B	4500-B,B	mg/L	BDL (<0.1)	0.5	1
10	Sulphate as SO ₄	4500-SO ₄ ²⁻ E	mg/L	28.99	200	400
11	Fluoride as F	4500-F,D	mg/L	0.55	1.0	1.5
12	Iron as Fe	3500-Fe,B	mg/L	BDL (<0.02)	1.0	No relaxation
13	Nitrate Nitrogen as NO ₃ -N	4500-NO ₃ ,E	mg/L	26.83	45	No relaxation
14	Nitrite Nitrogen as NO ₂ -N	4500-NO ₂ ,B	mg/L	BDL (<0.1)	0.02 - 2	13
15	Total Dissolved Solids	2540 C	mg/L	724.0	500	2000
16	Total Suspended Solids	2540 D	mg/L	BDL (<1)	-	-
17	Chemical Oxygen Demand	5220 B	mg/L	BDL	-	-

Note : BDL-Below Detection Level

Inference As per IS 10500:2012 Specification, the analyzed value for above measured parameters are within the permissible limits.

- Note:**
- The results listed above pertain only to the tested samples and applicable parameters.
 - Samples which are degradable/unstable will be disposed immediately after testing and others will be disposed after 15 days from the date of issue of test report unless otherwise specified.
 - Total liability of our laboratory is limited to the invoiced amount.
 - This report is not to be reproduced either wholly or in part and cannot be used as evidence in the court of law and should not be used in any advertising media without prior written permission. Subject to Mysore Jurisdiction.
 - Sampling is not done by us unless otherwise specified. Any discrepancy in the test report should be notified within 15 days.
 - For any complaints kindly register in our complaint Register maintained with the service coordinator.

ANALYSED BY (Rashmishree) Chemist	SECTION	SIGNATURE	DATE	 
	AUTHORITY	<i>[Signature]</i>	31/3/21	
	ACCOUNT OFFICER	<i>[Signature]</i>	31/3/21	

AUTHORIZED SIGNATORY
 Shivanand Shanabhogar
 Technical Manager

5. Standards to minimise the usage of water

Water closets and Urinals flow rate details were gathered and recommendations were made in order to minimize the flow rate of water from taps and flushes which is going to reduce water usage across the campus.

WATER EFFICIENCY MEASURES

WEM02* Water-efficient Faucets for Private Bathrooms: 2 L/min
Base Case Value: 8 L/min
Faucet Type: **Faucets with Aerators** | Flow Rate (...): 2 | Hot Water (...): Yes

WEM03* Water-efficient Faucets for Public Bathrooms: 2 L/min
Base Case Value: 8 L/min
Faucet Type: **Faucets with Aerators** | Flow Rate (...): 2 | Hot Water (...): Yes

WEM04* Efficient Water Closets for All Bathrooms: 6 L/High volume flush and 3 L/Low volume flush
Base Case Value: Single Flush, 8 L/Flush
Type Of Wa...: **Dual Flush** | High Volum...: 6 | Low Volume...: 3

WEM05* Efficient Water Closets for Public Bathrooms: 6 L/High volume flush and 3 L/Low volume flush
Base Case Value: Single Flush, 8 L/Flush
Type Of Wa...: **Dual Flush** | High Volum...: 6 | Low Volume...: 3

WEM07 Water-efficient Urinals: 2 L/flush
Base Case Value: 4 L/flush
Flush Volum...: 2


WEM13 Water-efficient Landscape Irrigation System: 4 L/m²/day
Base Case Value: 6 L/m²/day
Average Wa...: []


WEM14 Rainwater Harvesting System: 50% of Roof Area Used for Collection
Base Case Value: No Rainwater Harvesting

WEM15 Wastewater Treatment and Recycling System: 100% Treated
Base Case Value: No Water Recycling System

WEM16 Condensate Water Recovery: 100% Recovery

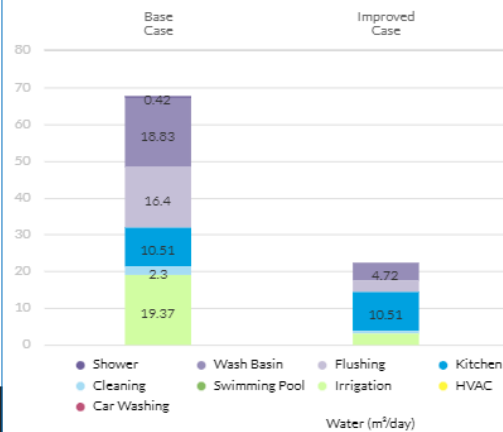
WEM17 Smart Meters for Water





62.5% Savings


62.54% Meets EDGE Water Standard




Category	Base Case	Improved Case
Shower	18.83	4.72
Wash Basin	0.42	0.00
Flushing	16.4	0.00
Kitchen	10.51	10.51
Cleaning	2.3	0.00
Swimming Pool	19.37	0.00
Irrigation	0.00	0.00
HVAC	0.00	0.00
Car Washing	0.00	0.00
Total	67.93	15.23

WATER EFFICIENCY MEASURES


Water Measures	JJS Medical College	Required to Achieve 20% and more
Water efficient faucets for private bathrooms	9.25 LPM	It is suggested to install water conservative fittings with aerators and restrict water consumptions to 2LPM
Water efficient faucets for public bathrooms	9.25 LPM	It is suggested to install water conservative fittings with aerators and restrict water consumptions to 2LPM
Efficient water closet for all bathrooms	No information	It is recommended to install efficient water closets (dual flush) of 6L/flush for high volume and 3 L/flush for low volume
Efficient water closet for public bathrooms	No information	It is recommended to install efficient water closets (dual flush) of 6L/flush for high volume and 3 L/flush for low volume
Water efficient urinals	No information	It is necessary to install water efficient urinals of 0.5 L/flush
Water efficient Irrigation System	No information	It is advisable to install water efficient irrigation system like drip irrigation with reduce law area and recommended to have native species
Rainwater Harvesting System	Doing	It is recommended to harvest 50% of the roof rainwater
Wastewater treatment & Recycling System	Not installed	It is suggested to treat the wastewater by 100% and it can be reused for landscaping and flushing purpose
Smart meters for water	Not installed	It is recommended to install separate meters for Borewell, Rainwater, Municipal and treated water to monitor the water usage pattern.






62.5% Savings

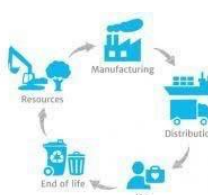
62.54% Meets EDGE Water Standard



74%



62.5%



97%

ENERGY
WATER
MATERIAL



Meets EDGE Energy, Water and Material Standards

EDGE Advanced



Recommendation



ENERGY			WATER		
Measures	Make/Model	Specification	Measures	Make/Model	Specification
Ceiling fan	Atomberg	30W	Washbasin Faucets	1. Hindware 2. Parryware 3. Jaquar	2 L/min
LED Lights	1. Lighting technology 2. Havells 3. Philips 4. Regent	20W	Water closets	1. Hindware 2. Parryware 3. Jaquar	3L/low volume flush & 6L/High volume flush
Roof SRI Paint	1. Asian 2. Berger 3. Dulux	SRI ≥ 85 Above	Urinals	1. Hindware 2. Parryware 3. Jaquar	2L/flush

6. Use of drought-tolerant plants in garden to minimize water usage:

We have six variety of drought – tolerant plants/ trees which are grown at multiple places in our garden area.

The details of plants and their images are shown below:

<p>BOTANICAL NAME: Cineraria martima</p> <p>FAMILY : Compositae</p> <p>PARTS USED : Whole plant</p> <p>USES : Eye problem, Cataract</p>	
<p>BOTANICAL NAME: Aloe vera</p> <p>FAMILY : Liliaceae</p> <p>PARTS USED : leaves</p> <p>USES: Laxative and purgative</p>	

<p>BOTANICAL NAME : Artocarpus herterophyllus</p> <p>FAMILY : Moraceae</p> <p>PARTS USED : Roots,fruits,wood and latex</p> <p>USES : Skin disease, Anthelmintic, Stomach compliant</p>	
<p>BOTANICAL NAME : Coleus blumie</p> <p>FAMILY : Labiatae</p> <p>PARTS USED : Leaves</p> <p>USES: Aromatic,Carminative,Emmenagogue</p>	
<p>BOTANICAL NAME : Azadiracta indica</p> <p>FAMILY: Meliaceae</p> <p>PARTS USED: Leaves and oil</p> <p>USES: Bitter tonic, Antiseptic, Anthelmintic</p>	
<p>BOTANICAL NAME :Terminalia arjuna</p> <p>FAMILY: Combrataceae</p> <p>PARTS USED: Bark</p> <p>USES: Cardiotonic,Astringent</p>	

JSS AHER provides the water dispenser which are placed at various points of the college and hostel for convenience of students to consume safe and clean water.



The campus has planted with samplings around for pollution free campus and to protect from landscape.

The College has RO water facility in the academic and residential areas along with in the premises of hostels is available. The regular water testing is performed in Department of Pharmaceutical Biotechnology of our college and the report is generated and based on that the necessary action is taken if the samples are found contaminated. The campus also provides RO water facilities for staff and students.



Support the local governmental body as per their direction.

SCIENTIFIC AND RESEARCH ACTIVITIES RELATED TO SDG 6

Water Quality Analysis of JSS Boys and Girls hostel in the JSS AHER campus

Department of Microbiology was involved in testing the quality of water in JSS AHER Campus.

Water sample from JSS girls and boys hostel were tested for microbiological load and report was



Water Quality Analysis of JSS Boys and Girls hostel in the JSS AHER campus

submitted to the hostel authority.

An extension activity focusing on the importance of nutrition, sanitation & hygiene was conducted on 24th November 2021 as part of the academic from the Department of Nutrition and Dietetics, JSSAHER. Program was organized at Simhadri Educational Trust, Shravanabelagola under the supervision of faculty Dr Sushma B V. Using a simple local Kannada / English language; Dietary requirements, health eating and hygiene practices were advised. In accordance, programme has focused on improving knowledge aptitude practices towards food and nutrients towards holistic development of health. The nutrition education program emphasized on the significance of consumption of wholesome foods, fruits and vegetables, essential for a growth & development. Also focused was on promoting WASH practices to improve sanitation & hygiene condition, thereby reducing the disease burden in vulnerable groups



An

extension activity focusing on the importance of nutrition, sanitation & hygiene

Live demo of phytoremediation of wastewater: As a part of the Science awareness program, funded by DST-STUTI, experiments/demonstrations on wastewater treatment using natural extracts from various plants (such as Neem, Moringa, Tulsi and similar plants)

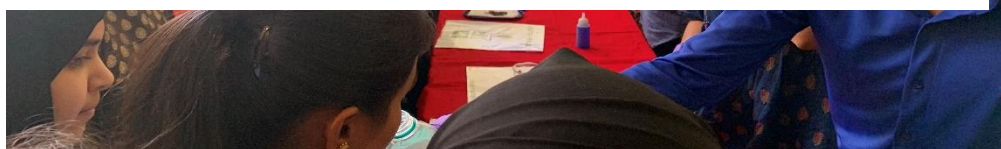
Live demo of phytoremediation of wastewater

was conducted. The program was conducted as an outreach activity, covering several schools and colleges in and around Mysore

Live demo on phytoremediation of coloured dyes: As a part of the Science awareness program, funded by DST-STUTI, experiments/demonstrations on phytoremediation of coloured wastewater was conducted. The aim is to treat the coloured water by using natural dehydrated



Live demo on phytoremediation of coloured dyes



roots of water hyacinth. The natural extract efficiently adsorbed the colour from the water, which showed the natural treatment approach to remove dyes. The program was conducted as an outreach activity, covering several schools and colleges in and around Mysore.

Department of Pharmaceutical Biotechnology of JSS AHER have conducted the awareness program with the help of students to analyse the presence of *E.coli* or coliform bacteria in drinking water collected from various drinking water facilities installed in college as well as hostels. The results shows that absence of *E.coli* or coliform bacteria in the drinking water collected from 5 RO water units at the campus.





PUBLICATIONS RELATED TO SDG 6

1. Mahesh P A. Is the impact of air pollution on lung function moderated by body mass index?; Lung India;2021 Sep;38(5);489-490
2. Jamuna Bai Aswathanarayan., Snehalatha Basavaraju., Dr. Madhu B., Dr. S Balasubramanian, Basavegowda M, Somanathan B. Coronavirus: occurrence, surveillance, and persistence in wastewater; Environmental Monitoring and Assessment;2021 Aug;193(8);1-24.

3. Basavaraju S, Aswathanarayan JB, Basavegowda M, Somanathan B. Coronavirus: occurrence, surveillance, and persistence in wastewater. *Environmental Monitoring and Assessment*. 2021 Aug;193(8):1-24.
4. Divya Jagadish and Vaudha Ranjan, A study on pharmaceutical waste management in selected pharmaceutical industries, *International Journal of Scientific Research*. (2022), 9(7);123-28
5. Linear regression approach for predicting fluoride concentrations in maternal serum, urine, and cord blood of pregnant women consuming fluoride-containing drinking water-Dr Raghavendra Shanbhog, Dr. Thippeswamy H M, Dr. Nanditha Kumar M, Dr Prashanth S N, M Girish-Clinical Epidemiology and Global Health-10-2452-0918
6. Effect of Indoor Air Pollution on Chronic Obstructive Pulmonary Disease (COPD) Deaths in Southern Asia-A Systematic Review and Meta-Analysis-Bellipady Shyam Prasad Shetty, George D'Souza, Dr Mahesh P A-Toxics-9-1-15-2305-6304
7. Nimisha Sinha, Dr. Vidya C S, Shreya Singh. Questionnaire-based survey on creating awareness among I MBBS Students on the practice of hygiene and risk of infections in dissection theatre. *International Journal of Health and Clinical Research*-4-242-245-2590-325X
8. Dr. Mahesh P A. Chronic airflow obstruction and ambient particulate air pollution. *Thorax*-0040-6376
9. Meridith Mario Wormald, Dr Thippeswamy H M, Dr Prashanth S N, Dr Devananda Devegowda, Dr Nanditha Kumar M. The association of fluoride in drinking water with serum calcium, vitamin D and parathyroid hormone in pregnant women and newborn infants;*European Journal of Clinical Nutrition*-1-9-0954-3007.