

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

## **COMPENDIUM ON SDG-13**

### **CLIMATE ACTION**

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



**2021-22**

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## ABOUT SDG 13



Climate change isn't something people get to choose to believe or not: it's happening. On an increasingly crowded planet, humanity faces many threats - but none is greater than climate change. It magnifies every hazard and tension of our existence. The Goal is aimed at integrating climate change measures, disaster risk measures and sustainable natural resource management into national development strategies. To minimize the human impact of geophysical disasters, the Goal calls for strengthening resilience and adaptive capacity, including human and institutional capacity on mitigation, adaptation, and early warning. Efforts at the national level for adopting green technologies, promoting the use of clean and modern source of energy, advocating for behavioral change for sustainable use of resources, must be complemented by international cooperation on climate change since the causes and effects of climate change transcend national boundaries.

Demanding that our leaders act on climate change is about a lot more; it's about safeguarding our health, preserving our prosperity, and protecting the future of our next generation.

## **GREEN POLICY OF JSS AHER**

- JSS AHER has its Green Policy which emphasizes on the following to be strictly followed on all its campuses.
- Maintenance of clean, green, and smart-campus–waste segregation and planned disposal of waste through authorized agencies only.
- Disposal of biomedical waste, Chemicals, and e-waste as per the norms of the Karnataka State Pollution Control Board
- Energy conservation strategies–For e.g., the use of CFL/LED lights Solar heaters, and Air-source heat pumps in the hostels
- Plastic-free campuses
- Conservation of water resources - Rainwater harvesting and wastewater treatment
- Reducing paper usage through e-communication and education through online portal
- The HEI actively organizes Swachh Bharat Abhiyan and creates awareness and consciousness amongst students.

Provision for natural lighting and adequate ventilation in all its buildings

## **EFFORTS TOWARDS SUPPORTING SDG 13 AT JSSAHER**

Abiding by JSS AHER Green policy
Ensuring greenery in the college and hospital campus
Conducting disaster preparedness mock drills
Rainwater harvesting
Training of ASHA workers on disaster preparedness and response
Participation in disaster response activities
Undertaking research projects among disaster affected population
Dissemination of disaster related research as scientific publications



**Activities conducted aligning to Goal 13**

<p><b>Curriculum</b></p>	<p>“Education can play a major part in the required transformation into more environmentally sustainable societies, in concert with initiatives from government, civil society, and the private sector,” said a 2016 UNESCO report titled Education for people and planet which pushes for education as one of the tools for dealing with the environmental crisis caused by human behaviour.</p> <p>Education and the core curriculum shape’s values and perspectives of the young students who are undergoing courses. The syllabus contributes to the development of skills, concepts, and tools that can be used to reduce or stop unsustainable practices, and with this ideology, the course of Environment studies was introduced in the first-year bachelor’s degree. The subject has core concepts and methods from ecological and physical sciences and their application in environmental problem solving and makes them understand the transnational character of environmental problems and ways of addressing them, including interactions across local to global scales.</p> <p>The outcome which was intended to be achieved was to reflect critically about their roles and identities as citizens, consumers and environmental actors in a complex, interconnected world and also deepen the Understand the utility of environmental source.</p>
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## EFFORTS AT A GLANCE



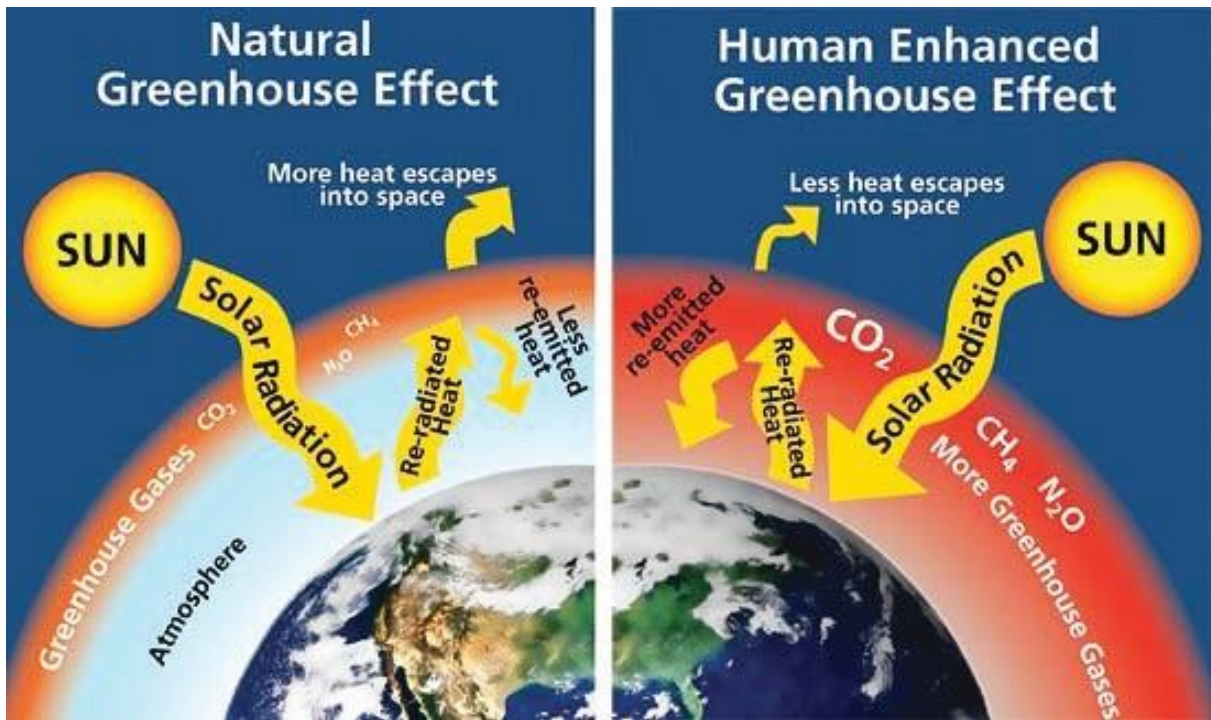
Climate change refers to long-term shifts in temperatures and weather patterns. These shifts may be natural, such as through variations in the solar cycle. Climate change” encompasses global warming, but refers to the broader range of changes that are happening to our planet. The effects of Human causing Global warming are happening now, are irreversible on the timescale of people alive today, and will worsen in the decades to come.

Global climate change is not a future problem. Changes to Earth’s climate driven by increased human emissions of heat-trapping greenhouse gases are already having widespread effects on the environment: glaciers and ice sheets are shrinking, river and lake ice is breaking up earlier, plant and animal geographic ranges are shifting, and plants and trees are blooming sooner. Effects that scientists had long predicted would result from global climate change are now occurring, such as sea ice loss, accelerated sea level rise, and longer, more intense heat waves. Climate change affects the social and environmental determinants of health – clean air, safe drinking water, sufficient food and secure shelter.

Some changes (such as droughts, wildfires, and extreme rainfall) are happening faster than scientists previously assessed. In fact, according to the Intergovernmental Panel on Climate Change (IPCC) — the United Nations body established to assess the science related to climate change — modern humans have never before seen the observed changes in our global climate, and some of these changes are irreversible over the next hundreds to thousands of years.

It’s a known fact that our Earth’s atmosphere consists of Nitrogen (78%), Oxygen (21%) and remaining 1% of other traces of gases, what we call as “Green House Gases” (GHG’s) which are contributing towards the “Green House Effect” (GHE). Amongst the GHG’s – Carbondioxide forms the largest, about 56%, followed by Methane – 18%, Flouorocarbons – 13% followed by Ozone – 7% and Nitrogen Oxides – 6%. These form a blanket around and helps in keeping the Earth’s atmosphere warmer by about 30 degrees which helps sustain life of literally every form under their respective prevailing climatic conditions. Another major factor contributing almost to 95% of the global warming is the “Water Vapour” following the vicious cycle as a result of the excess GHG’s in our atmosphere.

31% of the solar radiation is reflected and only 69% of it is absorbed by the Earth’s atmosphere. Earth upon heating, reflects infrared rays back to the atmosphere which is absorbed by the GHG’s and re-emitted back to the Earth and thus prevents heat from escaping and cause heat retention and this is what is called as GHE, which is definitely helpful if it is within normal limits without which our Earth would have been still in the Ice Age as depicted in the animated movie series with the same name, where in there was definitely very less carbon dioxide concentration in the glacial periods. But what is alarming in the new millennium is the rate at which the GHG’s are being emitted and the rapidity with which our earth is being warmed. And the total amount of GHG’s produced by an individual or a business or a product is called the “Carbon Footprint”. Since the start of the Industrial Revolution in the 18th century in Europe, the amount of GHG’s emission has been increasing exponentially from across the globe.



## EFFORTS TOWARDS GREEN POLICY OF JSSAHER



JSS AHER has its Green Policy which emphasizes on the following to be strictly followed in all its campuses.



Energy conservation strategies – For e.g. use of CFL/LED lights and Solar heaters and Air source heat pumps in the hospital and hostels



### Reducing paper communication: Use of electronic communication and patient management software

Provision for natural light in all its buildings Provision of a open court yard in the centre of the building.





The Institution also has included a subject Environmental Sciences in all courses as stipulated by UGC and organizes Environment Day and Water Day. The Institution believes in preserving traditional medicine and has established medicinal plants garden and promotes eco-friendly cultivation practices by organizing medicinal plants exhibition in JSS Urban Health Centre

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 1000m<sup>3</sup>.
- 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.



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- Provision for natural light in all its buildings.

**GREEN CAMPUS**





## PLASTIC FREE CAMPUS



## INITIATIVES TOWARDS RENEWABLE ENERGY

### Clean and renewable energy utilization

As initiative towards smart campus the college have installed solar panels to reduce the electricity requirements as part of clean and renewable energy utilization. The dependency has reduced by 50 % or more after the installation of Solar panels. The saving of electricity is recorded on regular basis which is given in the table below.



Solar panel @ JSS College of Pharmacy, Mysuru

Duration	KEB				Solar units generated		Total= (KEB & Solar)	
	Import Units KEB (A)	Export Units from Solar (B)	Actual Consumption of Units C= (A-B)	Amounts (D)	Units (E)	Amounts (F)	Units G=(C+A)	Amounts H=(D+F)
April-August 2022	102390	8670	93720	957625	60276	373711	153996	<b>879889</b>

### Reduction of electricity consumption:

- The total electricity usage in the campus was brought down to 31000 watts from 45000 watts through switching over to LED bulbs from incandescent bulbs.
- Installation of motion sensor lights to save electricity in the no men place. Motion sensor lights are placed at college elevator and the college corridor.
- Awareness program to the students and faculties to conserve the electricity and other forms of energy.
- Encouraging students in actively participate and creates awareness among the students about energy conservation.
- **Reduction of Carbon foot print:** The college encourages the staff for carpooling and encouraging for use of E- Vehicles to reduce carbon foot print.

The Smart Campus initiatives by the committee proposes for installation of Low cost efficient & Low carbon energy systems in the campus. The University policies on energy savings conservation measures and green clean safe eco-friendly campus are:

<https://jssaherstorage.blob.core.windows.net/jssuudstorage/udpdocs/energy-savings-conservation-measures.pdf>

<https://jssaherstorage.blob.core.windows.net/jssuudstorage/udpdocs/green-clean-safe-and-eco-friendly-campus.pdf>

One such initiative is the installation of a New Diesel generator as per the policies quoted by the University.



Class-defining technology engine is designed to meet stringent exhaust emission tests as per revised Ministry of Environment, Forest and Climate Change norms, thus offering environment friendly power.

- ▶ Size with Optimum Power to Weight Ratio
- ▶ Smart Aesthetic and Superior Finish
- ▶ Best in Class Transient Response
- ▶ Latest Emission Norms

New smart Diesel Generators have been installed. The new higher capacity generator of 250kVA capacity single unit with high power output, more fuel efficient and obeys the latest emission norms.

## OXYGEN PLANT AT JSSAHER

With the Divine presence of His Holiness Swamiji, Sri. Basavaraj S Bommai, Hon'ble Chief Minister, Govt. of Karnataka inaugurated Oxygen Plant on 26.12.2021 at 4.30 p.m. at JSS Hospital, Mysuru. Dr. K Sudhakar - Hon'ble Minister for Health & Family Welfare and Medical Education and other dignitaries were present in the inauguration program.

In view of creating more number of oxygen beds due to the high demand, the management has decided to increase LMO tank capacity, accordingly we have installed additional 13KL capacity of LMO plant along with the existing 13KL capacity tank at our Hospital on 29-11-2021.

We had successfully treated 5000 COVID patients at our hospital with 205 oxygen lines during first wave of COVID-19 pandemic. During 2nd wave nearly 2000 COVID patients from Mysore and surrounding regions have been treated by extending another 150 oxygen beds.



## PROGRAMMES AND ACTIVITIES ORGANIZED ALIGNING TO SDG 13

### Outreach Activities through NSS

#### Outreach Camps

#### School cleaning and sapling plantation

The NSS volunteers representing the department at the annual NSS camp in Majjigepura village, Srirangapatna Taluka, Mandya District had conducted a special drive for planting a sapling in the government school. Around 35 volunteers participated in the program of the department and nearly 50 saplings were planted on the school campus. The school children were involved in the planting drive and were encouraged to take responsibility for the plants.



**Cleaning Drive and awareness program** - 50 NSS Volunteer students planned and carried out a cleanliness drive of the playground at the government school. They also educated the community about the importance of a clean environment.



On **June 8<sup>th</sup> 2022**, on behalf of world Environment Day and world Ocean day, a special invited talk has been organised by Dr Divya J, Assistant Professor, Department o Environmental Science, JSSAHER, Mysore. The invited speaker is Dr Krishnakumar A, Scientist D, Ministry of Earth Science, Government of India, Thiruvananthapuram, Kerala. The invited lecture was focused on World Environment and its significance, current environmental issues and challenges like, global warming and other climate variation issues, marine pollution, global environmental changes in Sahyadri hill and sustainable development and its goals. 115 students including faculties and research scholars participated in the event. The event was organised through virtual mode.

## PROGRAMS CONDUCTED BY THE INSTITUTION

### WORLD WATER DAY

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



### WORLD ENVIRONMENT DAY

JSS School of Public Health – JSS Medical College, and Department of Environmental sciences – JSS AHER together observed the world environment day along with the collaboration with Walk Mate footwear company that funded this event on the date of 6th June and 7th June 2022. Visited 16 government schools and conducted painting competition for 5th-10th std students. The theme was Climate Change and Health - Message to the Public. Overall 960 students took part in the competition and presented their unique ideas to save the environment and spread awareness in the form of Art. Saplings were provided to all winners.

An orientation program through role-playing was done in a few schools quiz and interactive sessions were conducted green and brown colour dress code was followed.





## WORLD DEAF DAY & INTERNATIONAL WEEK FOR THE DEAF



A school health camp was organised for the deaf children at the Parents Association of the Deaf Children Trust, Bogadi on Friday 24-09-21, with the aim of addressing the health needs of the deaf children who have come from different parts of Karnataka and are undergoing habilitation at this centre. The camp was conducted by Dr Bharathi MB and Dr Sandhya D along with the Department of Pediatrics, Ophthalmology and the JSS Institute of Speech and Hearing. Dr Bharathi addressed the mothers of the deaf children and extended our support to this special community.

Dr Bharathi M B, Senior Professor in the Dept of ENT gave a radio talk on JSS Radio about deafness on Saturday 25-09-21. She spoke about the means to diagnose deafness early and the various treatment options available at different age groups as well as tips to the general public on protection of their ears.

An ENT check up and Hearing Screening camp for children was organised in 26-09-21, Sunday, in association with the JSS Institute of Speech and Hearing, Mysore



## WORLD HAND HYGIENE DAY WAS OBSERVED

This year's theme for world hand hygiene day 2022 - "Unite for safety - clean your hands" is focused on recognizing that people at all levels can work together through clean hands, to meet the common goal of safety and quality in health care delivery. A strong quality and safety culture will encourage and support people to clean hands at the right times and with the right products.

## WORLD HEALTH DAY-2022



World Health Day 2022 was observed by the Department of Community Medicine, JSS Medical College on 08.04.2022. The event was attended by Phase – III MBBS students, PG students of the Department of Community Medicine, Teaching and Non-Teaching faculty of the Department of Community Medicine and School of Public Health.



World Health Day 2022 was observed by the Department of Community Medicine, JSS Medical College

Chief Guest, Dr. P. Sudhakar Reddy, Professor and Head, Department of PG studies in Swasthavritta, JSS Ayurveda Medical College, Mysuru, delivered the guest lecture on World Health Day theme 2022 – “OUR PLANET, OUR HEALTH”.

In accordance with the World Health Day theme, E - Poster and Reels Video Competition was organized for Phase – III MBBS students for which we received overwhelming response. There were 14 individual entries for E – Posters and 6 group entries comprising of 25 students which were displayed on this occasion. E-poster competition was judged by Dr. Sunil Kumar D and Dr. Praveen Kulkarni, Associate Professors in the Department of Community Medicine. Reels competition was judged by Dr. NayanabaiShabadi and Dr. Shwethashree M, Assistant Professors in the Department of Community Medicine.

1<sup>st</sup> Prize: Ms. Hema Sameera Pinnam; 2<sup>nd</sup> Prize: Mr. Shubham Mishra were winners of E poster competition

### AT JSS URBAN HEALTH CENTRE:

World Health day 2022 was conducted by Urban health centre from 07th to 13<sup>th</sup> April 2022 in field practice area, Bamboobazar. With the theme “Our planet, our health” health education programmes and camps were organized in different area of medar block as per instruction of Medical officer of UHC



### WORLD NO TOBACCO DAY OBSERVATION

This year the “World No Tobacco Day” (Theme- Tobacco: Threat to Our Environment) was observed by Department of Community Medicine, JSS Medical College at JSS High School Bannimantap. The event was co-ordinated by Dr Smitha MC, Assistant Professor, Department of Community Medicine, JSS Medical College, under the leadership of Dr. Narayana Murthy MR, Professor and Head, Department of Community Medicine



## **BIO-WASTE MANAGEMENT AWARENESS PROGRAMME**

The first cases of COVID-19 in India were reported in January 2020 and ever since, the infectious disease has spread rampantly, acquainting us to the new normal of wearing masks and face shields. Masks are now being used at regular basis, generating a lot of biomedical waste in the form of used masks. Hence, in these times, biomedical waste management is of great importance to reduce the serious health implications and to protect public health and environment.

Keeping the same agenda in mind, the NSS Unit of JSS Medical College, Mysuru organized an awareness programme to address the topic “Bio-Waste management”. It was conducted on 23 November 2021 in JSS High School, Bannimantap, Mysuru with over 8 volunteers participating in it. Around 140 students were educated about biomedical waste, use of color coded dustbins, disposal of house hold waste and mask disposal. This was achieved through the medium of poster and skit presentation and with active interaction with the students.

The programme was conducted in the honored presence Dr.Bharath T (NSS Programme Officer, JSS Medical College) and Dr.Ravishankar (Assistant NSS Programme Officer, JSS Medical College), who enlightened the students with their valuable inputs. It was concluded successfully with the students gaining an insight into how to manage the waste they produce.



### **Our Planet Our Health-Sangama Program**

Department of Public Health Dentistry, JSS Dental College & Hospital, JSS Academy of Higher Education and Research, Mysuru organized “SANGAMA” concluding ceremony of WORLD ORAL HEALTH DAY 2022 on 30th April

2022 at Smart class, JSSDCH.

## Celebration of Constitution Day of India



Mass reading of the preamble to the constitution' was organized by NSS Unit, JSS Dental College and Hospital at 10.30 am on November 26th 2021, giving publicity and keeping COVID protocols in mind.

## World Environment Day



Faculty of JSS Dental College and Hospital actively participated in World Environment Day 2022 which was observed on 9th June-2022. 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.

As a part of environment conservation initiatives and under the banner of Swacch Bharath Abhiyan, the College conducts campaigns on climate change risks, impacts, mitigation, adaptation, impact reduction to the local residents and adopted villages.



Within the campus, Planting and Labelling of the tree sapling is done and in tribal villages to keep environment green and eco-friendly.

## SUPPORTING GOVERNMENT IN DISASTER AND PANDEMIC SITUATIONS

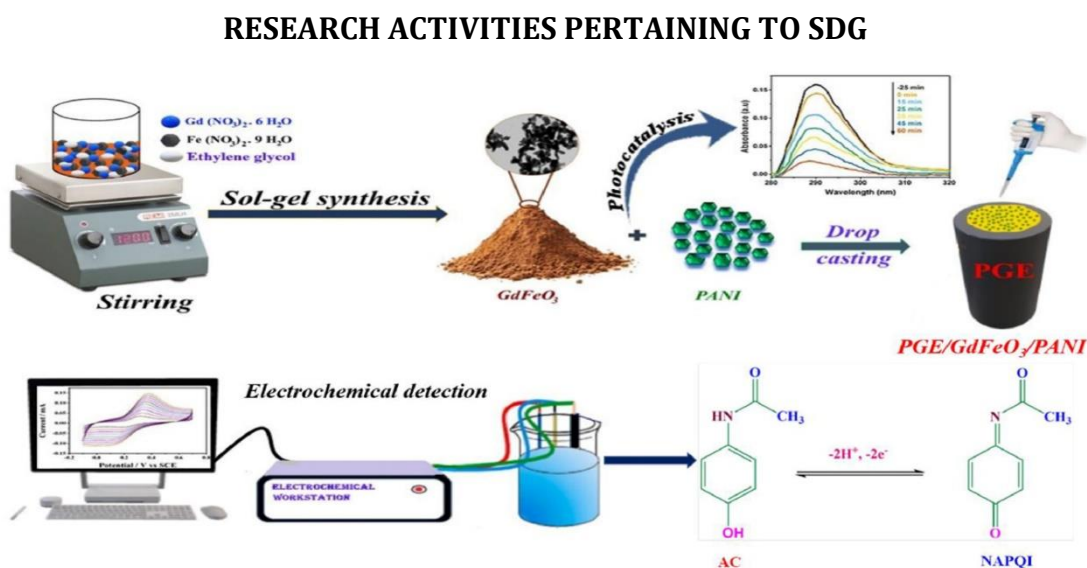
As health care institution we support the government by sending disaster response teams to the disaster affected areas from the JSS hospital to provide immediate medical care and relief to the victims using triage approach.

Advanced medical care is also provided at JSS hospital for the injured people in disasters.

We also join hands with government health authorities in surveillance of any health problems among people in disaster affected areas. Eg: Outbreak of communicable diseases.

Faculty members of JSS Medical College are a part of rapid response team of district health authorities in epidemic/outbreak response, COVID-19 pandemic containment, immunization etc. The faculty members of various departments are involved in district level health planning through expert consultations as and when government calls for.

## RESEARCH ACTIVITIES SUPPORTING SDG 13



An advance nanomaterial was designed by Dr. Shivaraju H P, **Department of Environmental Sciences** and his group for sustainable detection and treatment of contaminants of emerging concerns (CECs) in an aqueous media. The system helps to assess water contamination specially emerging contaminants like personal care and pharmaceutical products in water bodies that apparently contribute towards the conservation of water bodies

Department of Nutrition & Dietetics demonstrated utilisation of nutrient rich microgreens grown at the department in development of food formulations.



**Mustard seeds microgreens microgreens**



**Fenugreek seeds microgreens**



**Mustard seeds microgreens**

**Proposal for Course Development for Arctic Polar Studies in SWYAM PORTAL has been submitted**

**Course Title: Green Technologies**

**Course Coordinator – Dr. Asha Srinivasan**

**Team Members:**

Dr. Shiva Raj HP, Department of Environmental Sciences, School of Life Sciences. JSS Academy of Higher Education & Research

Dr. Vadiraj KT, Department of Environmental Sciences, School of Life Sciences. JSS Academy of Higher Education & Research

Dr. Raghu Ram Achar, Division of Biochemistry, School of Life Sciences. JSS Academy of Higher Education & Research

Dr. Shalini, Department of Health System & Management, JSS Academy of Higher Education & Research

### **Introduction to the course:**

The Polar Regions are considered the ends of the earth, but what happens there affects all of us in every corner of planet earth. There has been an overwhelming scientific consensus that the human activity across the globe is driving the climate change. The impact and time scales of this climate change, such as the rise in sea levels, depletion of marine resources, are some of the biggest issues the global society is facing today. The arctic region is seen as a global barometer of climate change. It's a place where threat as well as opportunities co-exist at the same time and place.

India is one of the 13 countries that initiated Arctic research program in 2007 that was focused on the monitoring climatic changes. Early this year in March 2022, India's Arctic policy on "Building a partnership for sustainable development was launched". This partnership policy will play pivotal role in our country, for a future, where mankind's biggest challenges, like climate change, can be addressed through a collective effort.

Given its standing as a global leader in innovation, India is in a unique position to assist, and assimilate, the advanced technologies to address a host of needs to protect not only the polar regions such as Arctic and Antarctic zones, but to the entire Planet Earth

In order to provide, support and sustenance to such policies, institutions providing higher education, such as JSS Academy of Higher Education & Research, Mysore, will be one be torch bearers to host a range of courses that will bring an awareness in citizens about the drastic changes in the climate, strategies and innovative technologies to preserve exceptional environments.

One such "know how" course will be "Green Technologies", a course will emphasize on green systems and the environment, energy technology and efficiency for sustainable society. The course will deliver study components with intelligent engineering solutions for increased global energy demand, improved energy efficiency, minimized footprint of energy usage, and smart engineered industrial ecology for sustainability. The course is for 8 weeks & 8 modules and will provide structured videos and study materials. The learner will be assessed with timed assignments and formative assessments.

### **About the Course**

"Green Technologies" is a highly interdisciplinary 8-week program that emphasizes green systems and the environment, energy technology and efficiency and sustainability and society. The course will focus on the interface between Environment and Human Society, communicating the Arctic issues and strategies to counteract the existing environmental issues.

The discipline seeks opportunities for alternative sourcing, conservation, efficiency and repurposing through an understanding of product life cycles from origins to recycling or inevitable disposal.

Green technologists will design products, processes and complex infrastructure systems to promote sustainable attributes of importance to the environment and the global community.

## ACADEMIC ACTIVITIES SUPPORTING SDG 13

### GUEST LECTURES CONDUCTED

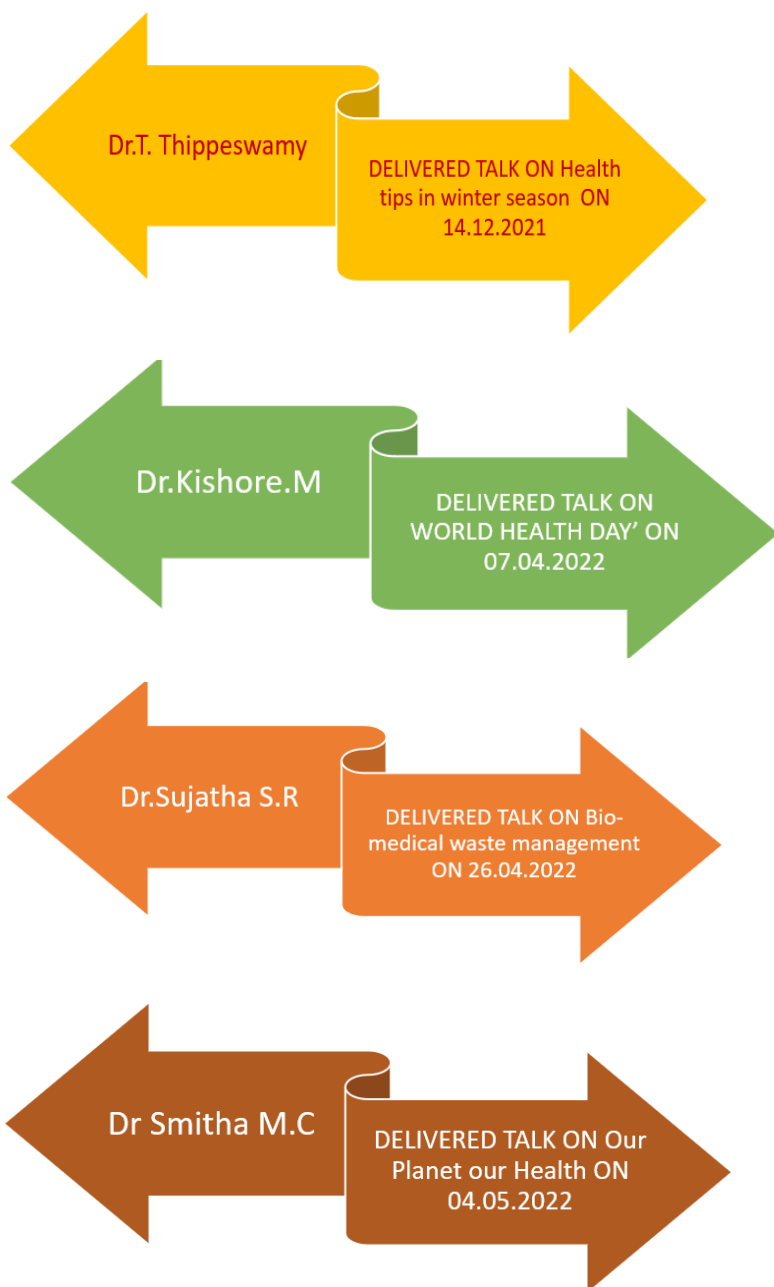
Dr Archisman Mohapatra from GRID council, New Delhi delivered talk on Strategic thinking and decision making and strategic planning : Environmental, scenario, Implementation and Evaluation- on 12/03/2022

Dr Sajjan Madappady delivered talk on Strategy :Various definitions components of strategic management - introduction to strategic planning & management, process ,vision, mission, objectives ,environment analysis ,internal analysis-on 22/02/2022

### GUEST LECTURES DELIVERED BY FACULTY MEMBERS







## PRESENTATION BY STUDENT

Name of the student	DEPARTMENT	TOPIC- Poster/Oral	DATE / VENUE
Dr.Athira Satheesh	Respiratory Medicine	Comparison of hypoxemia between tobacco induced COPD and biomass exposure COPD	15 <sup>th</sup> & 16 <sup>th</sup> March 2022 JSS MC Student Research fair 2022 Mysuru

## COLLABERATIONS SUPPORTING SDG 13



Dr Subhash Chandra HOD of Medicine Dr Sharath Chandra HOD of Surgery, Dr Sathish Kumar Surgeon, Dr Vidya CS Professor of Anatomy was felicitated by Vijaynagar association and Sri Nagendra MLA, Sri Rajeev MUDA chairman and Sri Subaiah Corporator on 4.7.2021 This was followed by plantation at Vijaynagar park.

Sl No	Collaboration with Institution name	Area	Objectives	Outcomes (any projects/publications)
1	GRAAM	Urban Youth Governance	<p>To develop students of MPH with professionalism, leadership and to be socially responsible youth of the nation.</p> <ul style="list-style-type: none"> <li>• To Build the Capacity of the MPH students on Urban Governance issues including Urban Health and Sanitation challenges.</li> <li>• To Mentor students in the space of urban governance and to conduct group research, for in- depth understanding of the urban governance issues.</li> <li>• To embrace the challenges of the 21 st Century by being part of the governance system and to find innovative solutions to new age challenges</li> </ul>	Fellowship program for 7 MPH students
2	University of Boston	Impacts of Heat Stress on Maternal and New-born Health Outcomes in India, and Adaptations to Improve: An Interventional Study	<p>Aim 1: To map heat wave vulnerable areas in three districts of Karnataka state with different climatic zones and evaluate the pre-selected low-cost sustainable exterior architectural interventions in existing residential buildings to reduce indoor heat.</p> <p>To assess the effectiveness of exterior architectural interventions to reduce indoor heat and improve the health outcomes of mother and child residing in heat wave vulnerable areas in Gulbarga, Mangalore and Mysore.</p>	Heat Exposure Interventions for Gestational and Neonatal Health Improvements in India project proposal submitted to Wellcome Trust

## RESEARCH PROJECTS

<i>Sl No</i>	<b>Title</b>	<b>PI</b>	<b>Dept</b>	<b>Funding agency</b>
1	To Investigate Long-Term Impact Of Air Pollution On Airway Remodeling And Aging Of Lungs In Healthy Urban Population Of South India.	Dr. Rajesh T, Biochemistry	--	JSS AHER, Mysuru
2	Longitudinal effects of Air Pollution Exposures on Lung growth and development of biomarker of lung function deficit in Urban Children	Dr. Rajesh Kumar T.	Pharmacology, JSS CP, Mysore	India Alliance DBT-Wellcome
3	Molecular patho-mechanism of biomass smoke induced chronic obstructive pulmonary disease among women: Population based- and in vitro exposure studies	Dr. Mahesh P A	Respiratory Medicine, Biochemistry	Swedish Heart Lung Foundation
4	Air Pollution & Biomarker of lung function	Dr. Mahesh P A	Respiratory Medicine,	<b>India Alliance DBT wellcome</b>
5	Air pollution & Lung Injury	Dr. Mahesh P A	Respiratory Medicine, Biochemistry	<b>ICMR</b>

## INTERNATIONAL RESEARCH PROJECTS

<b>Funding agency</b>	<b>PI Department</b>	<b>CO Investigators</b>	<b>Area of Research</b>	<b>Funds Sanctioned in Rs</b>
<b>Latrobe University, Melbourne, Australia</b>	Respiratory Medicine	Biochemistry	Air pollution & Asthma	26,00,000.00

## ICMR SPONSORED UG STUDENT RESEARCH PROJECTS

<b>Sl.No.</b>	<b>Title</b>	<b>PI</b>	<b>Guide</b>	<b>Amount sanctioned</b>	<b>Duration</b>
<b>1</b>	Multi-modal capacity building strategy to improve Biomedical waste management practices at Primary health care centres	Ms. Dhamini	Dr. Sowmya G S	50,000.00	6 months
<b>2</b>	Assessment of indoor air quality and its implication on health in an urban slum of Mysuru city, Karnataka	Mr Samyak T Shah	Dr Nayana S	20,000/-	6 Months

## PUBLICATIONS RELATED TO SDG 13

1. Marissa B Reitsma., Mahesh P AReitsma MB, Kendrick PJ, Ababneh E, Abbafati C, Abbasi-Kangevari M, Abdoli A, Abedi A, Abhilash ES, Abila DB, Aboyans V, Abu-Rmeileh NM. Spatial, temporal, and demographic patterns in prevalence of smoking tobacco use and attributable disease burden in 204 countries and territories, 1990–2019: a systematic analysis from the Global Burden of Disease Study 2019;The Lancet;2021 May 27;397;2337:2360.
2. Parthasarathi, Ashwaghosha; Shankar, Malavika; Madhivanan, Purnima; Lokesh, Komarla Sundararaja; Undela, Krishna; Krishna, Mamidipudi Thirumala; Mahesh, Padukudru Anand. Determinants of Tobacco Use and Nicotine Dependence Among Health-care Students and Their Undergraduate Peers;Current Respiratory Medicine Reviews;2021;17(3);139-150.
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## JSS ACADEMY OF HIGHER EDUCATION & RESEARCH, MYSURU

# Energy Conservation & Recycling Policy

### 1. Purpose

In order to minimize energy usage, improve the efficiency of all energy/ resources (natural resources, water, electricity ) consuming systems and equipment, and improve the environment in all facilities, JSS Academy of Higher Education & Research has adopted a energy / resources conservation and recycling policy.

### 2. Definitions

- Energy conservation : Energy conservation is a practice of decreasing the quantity of energy used and achieved through efficient energyuse.
- Recycle: Recycle is a process of collecting and reprocessing materials that would typically be consideredwaste.

### 3. Responsible Office

Office of the Vice Chancellor, Registrar & Finance Officer

### 4. Policy

Conservation of energy and natural resources and recycling process is an integral part of JSS Academy of Higher Education & Research (JSSAHER) facilities' design and usage. The JSSAHER employs a variety of energy conservation, recycling, and other techniques to lessen the consumption of resources and achieve the lowest feasible life cycle costs. However, occupant health, safety, comfort, and program requirements shall always be the primary concerns. Energy conservation measures will be achieved by using the most cost-effective, energy-efficient approach with consideration given for flexibility of use and future remodeling convenience. Recycling efforts are encouraged at the Institution/department level.

## **5. Responsibilities**

- A. All faculty, staff, students, design consultants, and construction contractors must observe energy and resource conservation measures employed by the campus.
- B. The Campus Facilities Maintenance & Management Authority- Deputy Registrar shall be the principal coordinator of all design disciplines, which includes responsibility for the implementation of this policy.
- C. Constituent Colleges & Departments shall be responsible for internal energy conservation, recycling efforts.

## **6. Related Policies**

The energy conservation and recycling policy of JSS Academy of Higher Education & Research (JSSAHER) follows :

- The Swachh Bharat Mission (Urban) guidelines- Government of India.
- National conservation strategy and policy statement on environment and development- Government of India.

## **7. Date of implementation**

This policy will come into immediate effect from 01.01 .2022

## **8. Date of revision**

01.01.2024

  
**REGISTRAR**

## Plastics Policy

### I. Preamble:

JSS Academy of higher education & Research is committed to protecting the environment by minimising the use of plastic in the campus. JSSAHER recognises that waste plastics pose a global threat to environment. Within the context of Smart Campus Policy, JSSAHER is working on minimising the use of plastics, to reducing the environmental impact of waste plastics.

### II. Policy Description:

- Measure and audit the use of plastics and set targets for reduction
- Plastics less than 50 microns is banned at JSSAHER
- Where possible, to use only those plastic products that can be easily reused or recycled
- Encourage innovative recycling opportunities for the plastic waste in buildings, cafes and daily operations
- Work with stake holders to develop capability and capacity for recycling plastic waste
- Maintain housekeeping standards at campus to attend to plastic litter
- Work with employees, customers and suppliers to encourage them to take practical steps to reduce the use of plastic and the production of plastic waste
- Expand campaign to highlight the environmental damage caused by plastic waste,
- Promote behaviours that reduce reliance on plastics and the reduction of plastic packaging waste
- Fund research and pilot projects for removing plastic waste
- Support and encourage employee and community initiatives to remove plastic waste and litter from the environment
- Work in partnership with research bodies, universities, suppliers, and other stakeholders to meet these policy objectives.
- Plastic Hazard Awareness program as a part outreach activity



### III. The Campus Maintenance & Management Authority:

Registrar and Deputy Registrar shall be the principal coordinator of all design disciplines, which includes responsibility for the implementation of this policy.

Constituent Colleges & Departments are responsible for internal monitor on the use of plastic and recycling efforts.

### IV. The policy relates to:

- Smart campus policy of JSSAHER.
- The Swachh Bharat Mission (Urban) guidelines, Government of India.
- National conservation strategy and policy statement on environment and development, Government of India.

### V. Date of implementation

This policy will come into immediate effect from 01.01 .2022

### VI. Date of revision

01.01.2024

  
**REGISTRAR**

## Smoke Free Campus Policy

### I. Preamble

JSS Academy of Higher Education & Research (JSSAHER) holds interest in protecting employees and students from smoke exposure, and to provide awareness on negative health consequences due to smoking. A smoke free campus protects all members of JSSAHER from any smoke exposure. JSSAHER prohibits smoking at all campuses and vehicles. Smoking of any tobacco substance, including electronic smoking devices, is strictly prohibited in all indoor and outdoor spaces, including parking lots or areas owned, regulated, or controlled by JSSAHER.

### II. Requirement

JSSAHER provides an environment that promotes the health, well-being, and safety of all students, faculty, staff, and visitors. In addition to causing direct health hazards, smoking contributes to incidents of fire damage, additional cleaning and maintenance costs, and employee absenteeism.

### III. Procedures

- This policy applies to all members of JSSAHER. This includes staff, students, alumni, volunteers, contractors, visitors, and anyone entering the campus and vehicle. All are expected to adhere to this policy and the applicable procedures.
- Event organizers are responsible for communicating this policy to event attendees.
- The policy applies to all facilities and all vehicles, whether owned, leased, or rented by JSSAHER.
- Awareness is important to this policy's effective implementation. This effort calls for respect and cooperation by all stakeholders of JSSAHER.
- It is also the responsibility of heads of the institutions to communicate this policy to employees and volunteers.

- Visitors, guests, volunteers, trainees, vendors, contractors, and supplemental staff employed through contract agencies, must be made aware of, and are expected to adhere to, this smoke free policy.
- Notice of this policy should be included in contracts when applicable.
- Human Resources will incorporate the policy into new employee orientation training programs.
- A comprehensive education and outreach campaign, including resources and referrals related to cessation, will be made available.
- The sale and advertising of tobacco, tobacco-related products, electronic smoking devices, and products related to electronic smoking devices are prohibited at all controlled properties except for advertising included in newspapers, magazines, or other written materials not authored by JSSAHER members that are sold, bought, or distributed on our property.
- Enforcement will first be educational, and include an emphasis on providing referrals to cessation resources. Non-compliance will be handled through our established personnel policies, the Standards of Conduct, and enforcement protocol prescribed in this policy.
- There will be no reprisal against anyone seeking assistance in enforcing this policy.
- Research involving smoking, for educational or clinical purposes, may proceed upon review and written approval by appropriate research protocol committees.
- Violations of this policy in most instances will be first addressed using standard educational methods, and thereafter by the following corrective measures.
- Non-compliance may be addressed by actions progressing into personnel action and fines.

#### **IV. Authorities enforcing the policy**

Vice Chancellor, Registrar and Deputy Registrar (Sr. Grade) of JSS Academy of Higher Education & Research for implementation of Smoke free campus policy.

#### **V. Date of implementation**

This policy will come into immediate effect from 01.01 .2022

#### **VI. Date of revision**

01.01.2024

  
**REGISTRAR**

## **JSS Academy of Higher Education & Research, Mysuru**

### **Transport Policy**

#### **1. STATEMENT OF POLICY**

All vehicles purchased by JSS Academy of Higher Education & Research, shall be managed and governed in accordance with this policy. The University shall operate its vehicle according to a pool system.

#### **2. PURPOSE**

The Transport Policy provides the University with a standard procedure for the acquisition, enhancement, use, control, maintenance, repair and disposal of the University's vehicles and for the management of related forms of transport engaged for University activities.

#### **3. DEFINITIONS**

- 'University vehicle' is defined as any driven vehicle, including buses, cars, vans, jeeps, bikes etc owned by the University and registered in the name of the University/Constituent colleges.
- 'Authorised User' is any member of the University or associate authorised by the Vice Chancellor & Registrar to use a University vehicle for University official purposes.
- 'Accountable items' are the vehicle log book, vehicle keys, navigational equipments etc.
- 'Notifiable Event' is an accident or incident involving damage to a University vehicle.
- 'University' refers to Jagadguru Sri Shivarathreeshwara University.
- 'Authorised Driver' refers a member of staff authorised to driver a University Vehicle.
- 'Authorised Service Providers' refers to an authorised fully licensed and registered service provider.

#### **4. Procedure**

##### **RESPONSIBILITY**

The responsibility for the Transport Policy rest with the Vice-Chancellor .

The implementation of the Transport Policy rests with the Principal through the Registrar for:

- Management of the University's /Institution's vehicles
- The monitoring and on-going review of the Transport Policy
- Provision of central support services to facilitate the effective management of the Transport Policy

The Campus Maintenance Authority- Deputy Registrar will make adequate budgetary provision to meet the initial purchase and replacement cost and such annual provision to meet the cost of registration, traffic accident charge, comprehensive insurance, maintenance, repair and operating costs of all vehicles of the University.

## **ROLE OF THE TRANSPORT OFFICER**

The Transport Officer shall:

- record on a central database all vehicle details and relevant information
- maintain pick up and drop schedule with time table of all the constituent colleges and departments
- maintain vehicles in a safe and roadworthy condition at all times
- maintain vehicles in accordance with the manufacturer's recommended service schedule by an authorized service provider
- direct that vehicles be operated only in accordance with the manufacturer's instructions
- direct that continuing arrangements for the proper garaging and/or securing of vehicles are effected;
- be responsible for the interior and exterior cleanliness of vehicles;
- maintain a register of Authorised Users;
- direct that vehicles are used only by Authorised Users;
- direct that vehicles are never used for personal purposes;
- direct that only members of the University or other persons specifically authorised by the Section Head / Dean /Principal of colleges / Heads of University department or their nominee travel in University vehicles
- liaise with the Deputy Registrar regarding any and all damage as a result of accidental or deliberate act and organise effective repairs by a suitable repairer at the earliest opportunity
- direct that vehicles be provided with a vehicle log book which is maintained and submitted on a weekly/monthly basis to the Deputy Registrar.
- direct that all elements of this policy, as amended from time to time, are complied with
- ensure that smoking, administration of illicit drugs, betel nut chewing or consumption of alcohol is not conducted in vehicles
- provide a certification, each year for annual accounts purposes that, vehicles have been operated in accordance with this policy in the preceding calendar year and
- be responsible to ensure the University Logo is affixed to all University vehicles.

## **AUTHORISED USERS**

Authorised Users will be required to complete an Authorised User Undertaking, as amended from time to time, prior to first use of any vehicle.

## **VEHICLE STANDARDS AND SPECIFICATIONS**

All Vehicles purchased by the University shall be listed in the Schedule to this Policy.

## **PURCHASE/DISPOSAL/REPLACEMENT**

All vehicles will be purchased by the Deputy Registrar & Finance Officer in consultation with the Vice-Chancellor. The procedure for purchase and disposal of University vehicles will be in accordance with the University's Finance regulation as amended from time to time.

## **OPERATING PROCEDURE**

- All vehicles will be pooled and garaged at the Property and University Campus/ Compound and any authorised location as approved by the Vice-Chancellor.
- For the use of any University vehicle, a booking will be made by Constituent Colleges and University Departments through a time schedule chart and will be recorded in an appropriate Vehicle log book by the Transport Officer.
- The Authorised Driver will be provided with the accountable items for the vehicle by the Transport Officer.
- At the completion of the period of authorised use, the Authorised Driver will complete the trip record in the vehicle log, return the accountable items to the Transport Officer, report any Notifiable Event, provide any receipt of expenditure and advise the current location of the vehicle.

## **USE OF PRIVATE VEHICLES ON UNIVERSITY BUSINESS**

- Use of private vehicles on University business is discouraged.
- The University will not accept any liability of whatsoever nature which may arise from use of a private vehicle on University business.

## **TAXIS/ HIRING**

The Officers of the University/ Principal/ Dean/ Head of the Colleges and University department may authorize the use of taxis/hired car at their discretion on a limited / need basis and not on regular basis.

## **INSURANCE**

- The University keeps operative comprehensive insurance for all registered University vehicles which provide insurance cover and indemnity, the benefit of which is available to authorised users of those vehicles.
- Under the terms of its policy no insurance cover is provided when a University vehicle is driven by:
  - a. an unauthorized driver
  - b. a unauthorized driver under the influence of drugs
  - c. a unauthorised driver under the influence of alcohol exceeding the legal limit
  - d. an unlicensed driver with the knowledge of the University.
- In any of the instances listed above, all costs to repair damage are to be borne by the driver.
- The Transport Officer is responsible for coordinating all vehicle insurance claims and subsequent repairs.

## **PERSONAL LOSS/DAMAGE**

- The University's insurance cover does not apply to unauthorised use of vehicles or in cases where conditions of use have been breached.
- The University will not accept liability for any damage, injury, loss or theft involving use of University vehicle where that damage, injury, loss or theft is not covered by the University's insurance policies.

## **NON-COMPLIANCE**

Use of a University vehicle under this policy is a privilege and not a right. Noncompliance with the policy may result in the withdrawal of usage entitlement and, where appropriate, the instigation of disciplinary proceedings.

**5. Authorities enforcing the policy**

Vice Chancellor and Registrar of JSS Academy of Higher Education & Research for implementation of Smoke free campus policy.

**6. Date of implementation**

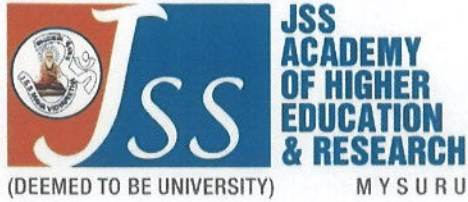
This policy will come into immediate effect from 01.01 .2022

**7. Date of revision**

01.01.2024

  
**REGISTRAR**

JSS AHER



JSS Academy of Higher Education & Research  
(Deemed to be University)  
Accredited 'A+' Grade by NAAC  
Sri Shivarathreeswara Nagara  
Mysuru – 570 015, Karnataka, INDIA

## **JSS Academy of Higher Education & Research**

**Mysuru**

### **Waste disposal Policy**



***“Reduce – Recycle – Reuse” is a social responsibility, let us work together  
for a better tomorrow***



### Waste disposal Policy Statement

This policy document contains information on the procedure being followed at the JSS Academia of Higher Education & Research and its constituent colleges and departments. The document is prepared based on the Central Pollution Control Board, Govt of India and Karnataka State Pollution Control Board guidelines. The document will undergo revision as and when the central pollution control board makes amendments / changes and also as per the academia documentation policy. Sharing or copying the information in written, photocopy or any other mode without prior consent of the academia is discouraged.

JSS ACADEMY

### Key personnel in waste disposal management

S No	Waste Disposal Activity	Function	Key Personnel	Contact details
1	Solid waste	Supervision of Collection and disposal	Mr Prashanth	9980613010
2	Green waste	Supervision of Collection and disposal	Mr Shivamanju	9886260635
3	E-waste	Supervision of Collection and disposal	Dr Ravindra	8105278665
4	Radioactive waste	Supervision of Collection and disposal	Dr Mahesh KP	9845189703
5	Biomedical waste	<b>Supervision of collection and disposal of Biomedical waste disposal</b> <ul style="list-style-type: none"> <li>▪ Collection</li> <li>▪ Segregation at source</li> <li>▪ Packing and Transport to central storage area</li> <li>▪ Storage and Handover to CBMWTF</li> </ul>	Dr Saravana Babu C	9042222277
		Disposal	Mr Umesh	9900970844
		Updating of biomedical waste register		
		Updating and Display of reports on website		

## **JSS Academy of Higher Education & Research**

JSS Academy of Higher Education & Research (JSS AHER), formerly known as JSS University, is a deemed to be university located in Mysore, Karnataka. It was established in the year 2008 under Section 3 of the UGC Act 1956. JSS AHER is recognized by MOE and accredited with A<sup>+</sup> Grade (CGPA of 3.48 out of 4) by National Assessment and Accreditation Council (NAAC) during re-accreditation in 2018. National Institutional Ranking Framework (NIRF) has listed JSSAHER at 37 ranks in the Universities Category. JSS AHER has the credit of being the top YOUNG University in the Karnataka State Universities Rating Framework (KSURF).

JSS AHER focuses on Medical and health-sciences studies through its constituent colleges, JSS Medical College, JSS Dental College & Hospital, JSS College of Pharmacy, Mysuru and JSS College of Pharmacy in Ootacamund, School of Life Science, Mysuru, School of Life Science, Ooty, School of Public Health. The other university departments include Department of Health System Management Studies, Department of Nutrition and Dietetics, Department of Yoga, Department of Environmental Sciences, Department of Microbiology and Department of Biotechnology and Bioinformatics.

## WASTE MANAGEMENT POLICY

### 1, Scope

This document provides information on the procedure being followed on waste management in the Deemed to be University

### Applies to

All the teaching and non-teaching faculties, contractors and housekeeping staff

### 2. Preamble

#### Definitions

"**Authorization**" means permission granted by the Deemed to be University for the generation, collection, reception, storage, transportation, treatment, processing, disposal or any other form of handling of bio-medical waste in accordance with the rules and guidelines issued by the Central Pollution Control Board, Govt of India.

"**Authorized person**" means a person authorized by the Deemed to be University to generate, collect, receive, store, transport, treat, process, dispose or handle bio-medical waste in accordance with the rules and guidelines issued by the Central Pollution Control Board, Govt of India

"**Biological**" means any preparation made from organisms or micro-organisms or product of metabolism and biochemical reactions intended for use in the diagnosis, immunization or the treatment of human beings or animals or in research activities

"**Bio-medical waste**" means the wastes generated during the diagnosis, treatment or immunization of human beings or animals or research activities

"**Bio-Medical Waste Treatment and Disposal Facility**" means the facility wherein treatment, disposal of bio-medical waste or processes incidental to such treatment and disposal is carried out, and includes common bio-medical waste treatment facilities

**“Handling”** in relation to bio-medical waste includes the generation, sorting, segregation, collection, packaging, storage, loading, transportation, unloading, treatment, destruction, transfer, disposal of waste.

**“Healthcare facility”** means a place where diagnosis, treatment or immunization of human beings is provided irrespective of type and size of health treatment system, and research activity

**“Occupier”** means a person having day to day administrative control over the clinic / lab generating bio-medical waste, which includes a hospital, mortuary, anatomical wastes, pathological laboratory, animal house, blood bank, irrespective of their system of medicine

**“Operator of a common bio-medical waste treatment facility”** means a person who owns or controls a Common Bio-medical Waste Treatment Facility (CBWTF) for the collection, reception, storage, transport, treatment, disposal or any other form of handling of bio-medical waste.

**“Prescribed authority”** mean the State Pollution Control Board in respect of State and Pollution Control Committee in respect of Union Territory. In Karnataka it is Karnataka State Pollution Control Board (KSPCB)

**“Point of Generation”** means the location where wastes initially generate and accumulate.

**“Storage”** means the holding of biomedical waste for a temporary period at the end of which the bio-medical waste is treated or disposed.

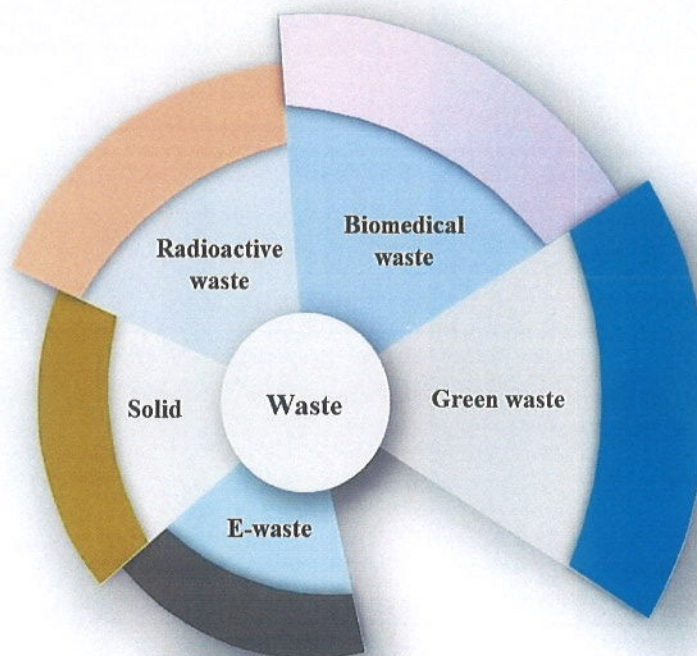
**“Treatment”** means any method, technique, or process, including neutralization, designed to change the physical, chemical, or biological characteristics or composition of any hazardous waste

**“Waste”** any substance which is discarded after the primary use, or it is worthless, defective, and of no use

## Policy

### **Classification of waste generated from the University, hospital and laboratories:**

- **General solid wastes:** Domestic garbage, food and food packing materials, papers and cardboards, construction and demolition debris, sanitation residues, packaging materials, usually disposed through municipality
- **Bio-medical wastes:** Solid or liquid wastes including containers, intermediate or end products generated during diagnosis, treatment & research activities of medical sciences.
- **Green waste:** Wastes generated from gardens and herbal gardens activities. These substances are mostly biodegradable.
- **Radioactive wastes:** Waste containing radioactive materials. Usually these are byproducts of nuclear processes. e.g. radio-isotopes, chemical sludge etc.
- **E-wastes:** Electronic wastes generated from electrical or electronic devices. Electronic scrap components, such as CRTs, may contain contaminants such as Pb, Cd, Be or brominated flame retardants.



### 3. Procedure

#### General Wastes

It constitutes all the waste other than bio-medical wastes and which has not been in contact with any hazardous or infectious, chemical or biological secretions and does not includes any waste sharps. This waste consists of mainly:

- 1) Newspaper, paper and card boxes (dry waste)
- 2) Plastic water bottles (dry waste)
- 3) Aluminum cans of soft drinks (dry waste)
- 4) Packaging materials (dry waste)
- 5) Food Containers after emptying residual food (dry waste)
- 6) Organic / Bio-degradable waste - mostly food waste (wet waste)
- 7) Construction and Demolition wastes

These general wastes are further classified as dry wastes and wet wastes and should are collected separately. The quantity of such waste is around 80 % to 90 % of total waste generated from the University, hospital and laboratories.

#### Food wastes

Food wastes from the hostels are collected in closed containers in respective collection area and are taken to piggery to feed the pigs. Food waste is disposal ensured through third party contract. Pilot trials under process to convert food waste in to organic manure and biogas

#### Green waste

The dried / wet plants materials such as leaves, stem, trunk, roots, flowers etc collected or cut or shred from the garden. Approximately 20 tonnes per year green waste is generated from the campus. The collected materials are processed in pits and approximately 12 tonnes of manure are prepared from the green wastes which are used for gardening purpose spread over in different locations of the campus.

### Construction and Demolition waste

As part of infrastructure development in the Deemed to be University, as and when renovation or new construction are planned, the solid debris generated are cleared from the campus through the contractors taking-up the construction work. These wastes are disposed through trucks and used as landfill (approximately 5 acre) at Belavatha site located 1 km from the main campus

### E-waste


Electronic wastes – computers, televisions, circuit boards, hard disks, printers and copiers, used batteries, which are not covered under biomedical wastes are disposed as and when such wastes are generated as per the provisions laid down under E-Waste (Management) Rules, 2016, Batteries (Management & Handling) Rules, 2001, and Rules/guidelines under Atomic Energy Act, 1962 respectively. This is outsourced through third part contract.

### Radioactive isotopes

Dept of Radiology, JSS Dental College and Hospital, is practising a safe way of radiology waste disposal as required by the Bhabha Atomic Research Centre (BARC), Govt of India, since decades. Following are the radiology wastes generated at JSSDC & H

1. Fixing Solution.
2. Lead foils.
3. Radiographs (X- Ray Hard copies).
4. Developer Solution.

Depleted Fixing solution is given to a private agency party (Amaron, Pit stop) to recycles and extract silver from it. The same is followed in the case of x-ray films once, which were collected for so many years excluding the last 10 years record. Lead foils are collected over a period of time and are given to battery manufacturers for recycling. Depleted Developing solution is with excessive water and disposed in drains as suggested by BARC.

  
**REGISTRAR**  
JSS Academy of Higher Education & Research  
Sri Shivarathreeshwara Nagara  
Mysuru-570015, Karnataka, India







## Bio-Medical Waste Management

**"Bio-medical waste"** means waste that are generated during diagnosis, treatment or immunization of human beings or animals or research activities or in the production or testing of biologicals. Medical waste includes all the waste generated from the Health Care Facility which can have adverse effects on the human health or to the environment in general if not disposed properly. In general, the quantity of biomedical waste will be 5% to 10% of total waste generated from the campus, hospitals and laboratories. These wastes consist of the materials originated patient or animals blood, secretions, infected parts, biological liquids such as chemicals, medical supplies, medicines, lab discharge, sharps metallic and glassware, plastics etc.

Bio Medical Waste Management Rules, 2016 categorizes the bio-medical waste generated from the health care facility into four major categories based on the segregation pathway and colour code:

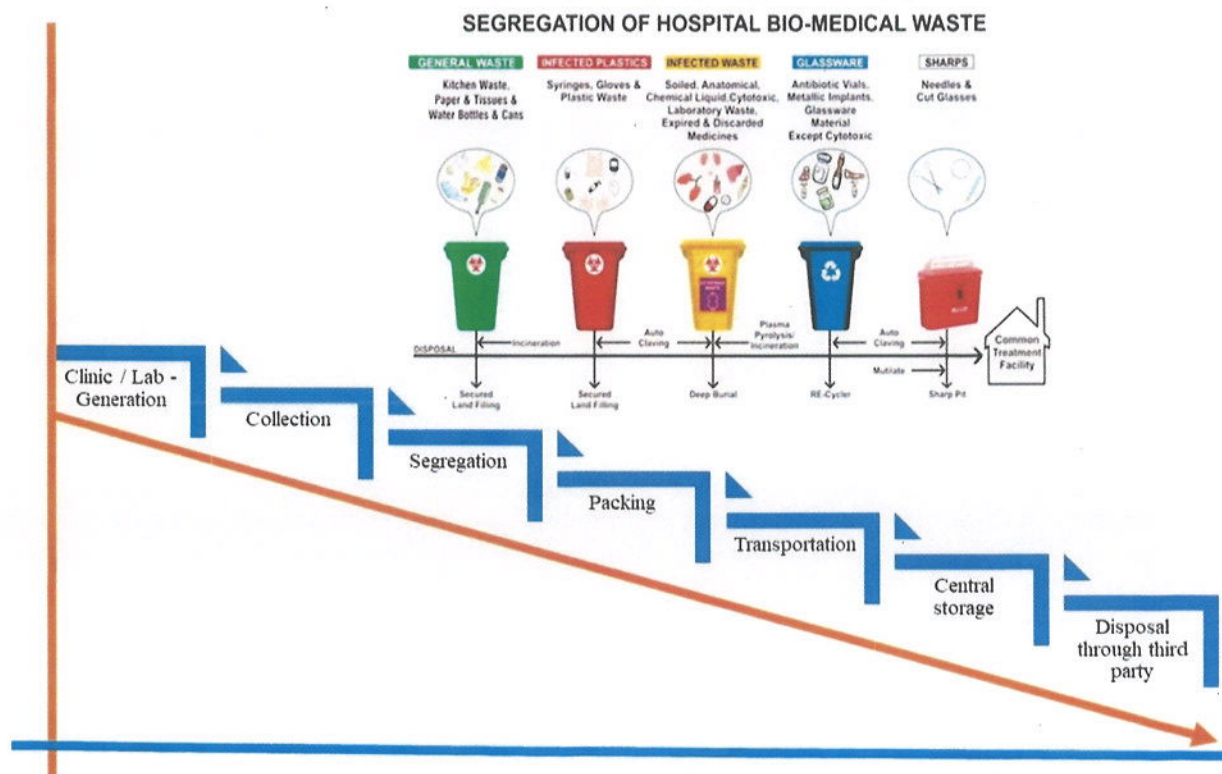
1. **Yellow Category**
2. **Red Category**
3. **White Category**
4. **Blue Category**
5. **Black Category**

S.No	Category	Type of waste	Color & Type of container
1	YELLOW	<ul style="list-style-type: none"> <li>➤ Human Anatomical Waste</li> <li>➤ Animal Anatomical Waste</li> <li>➤ Soiled Waste</li> <li>➤ Discarded or Expired Medicine</li> <li>➤ Microbiology, Biotechnology and other clinical laboratory waste</li> <li>➤ Chemical Waste</li> <li>➤ Chemical Liquid Waste</li> </ul>	<p>Yellow colored Non-Chlorinated Plastic Bags (having thickness equal to more than 50 <math>\mu</math>) or containers</p>  <p>Note                      (i) Infected secretions, aspirated body fluids etc from laboratory are disinfected before mixing with another wastewater                      (ii) Liquid chemical wastes are pre-treated/ neutralised before mixing with other wastewater from hospital.</p>
2	RED	<ul style="list-style-type: none"> <li>➤ Contaminated Waste (Recyclable)</li> </ul>	<p>Red Colored Non-Chlorinated Plastic Bags (having thickness equal to more)</p> 
3	WHITE	<ul style="list-style-type: none"> <li>➤ Waste Sharps including metals</li> </ul>	<p>White Colored translucent, punctureproof, leak proof, Temper Proof containers</p>
4	BLUE	<ul style="list-style-type: none"> <li>➤ Glassware</li> <li>➤ Metallic Body Implants</li> </ul>	<p>Cardboard boxes with blue colored marking or blue colored puncture proof, temper proof containers</p>

## BIOMEDICAL WASTE SEGREGATION

Biomedical waste generated from the hospital and laboratories are segregated at the point of generation as per the colour coding stipulated under Schedule I of BMWM Rules, 2016.

- Personnel Protective Equipment are provided to the bio-medical waste handling staff.
- Waste are segregated at the point of generation of source and not in later stages. “Point of Generation” means the location where wastes initially generate, accumulate and is under the control of doctor / nursing staff / lab etc. who is providing treatment to the patient / animals and in the process generating bio-medical waste.
- Posters / placards for bio-medical waste segregation are installed at the point of generation.
- Adequate numbers of colour coded bins / containers or bags are available at the point of generation of bio-medical waste.



## **BIO MEDICAL WASTE COLLECTION**

### **Time of Collection**

- Bio-medical waste should be collected on daily basis from each ward of the hospital / lab at a fixed time. There can be multiple collections during the day. All the biomedical waste should be collected, segregated, packed and sent to central biomedical waste storage every evening before 4.30 pm
- Clinics and labs should ensure collection, transportation, and disposal of bio-medical waste within 48 hours.
- Bio-medical waste bags and sharps containers should be filled to no more than three quarters full. Once this level is reached, the bags are tied or sealed with plastic tags.
- Replacement bags or containers are available at each waste-collection location so that full ones can immediately be replaced.
- All the bags and containers to be transported to CBWTF are labeled with following details:
  - Date of Generation
  - Type of waste category
  - Dept name
  - Contact Person Name and Phone Number

### **Interim Storage**

Interim storage of biomedical waste is discouraged in the clinics / labs

- If waste is needed to be stored on interim basis in the departments it is stored in the dirty utility/sections.
- In absence of dirty utilities/ sections such BMW must be stored in designated place away
- No waste is in patient care area / working area and procedure areas

General waste should not be collected at the same time or in the same trolley in which bio-medical waste is collected.

## Labeling

All the bags/ containers/ bins used for collection and storage of bio-medical waste, are labelled with the warning Symbol of Bio Hazard or Cytotoxic Hazard as the case may be as per the type of waste in accordance with the BMWM Rules, 2016.



**Bio-Hazard Label**



**Cyto-Toxic label**

## In-house Transportation of Biomedical waste

### Transportation Trolleys & Carts

In-house transportation of biomedical waste from site of waste generation/ interim storage to central waste collection, within the premises is done in closed trolleys/containers fitted with wheels for easy maneuverability. Such trolleys or carts are dedicated only for the purpose of biomedical waste transportation.



**Waste Collection Cart**



**Waste Transport Trolley for a Particular category of waste**

**Route of transportation is planned in such a way that:**






- Transportation does not occur through traffic and high-risk areas
- Supplies and waste are transported through separate routes
- Central waste collection area is accessed easily through the route adopted

**Central waste collection area – for temporary storage**

A central collection center situated within its premises for storage of bio-medical waste, till the waste is transported for treatment and disposal to CBMWTF. Center storage is manned and is under lock and key under the responsibility of a designated person. Central collection area has proper ventilation through the use of exhaust fan, hand wash area, weighing balance etc.

- Location of central waste collection facility is away from the public/visitors' access.
- The space allocated for collection is sufficient for the quantity of waste generated from premises
- Space is sufficient to store at least two days generation of waste
- Center has a concrete ramp for easy transportation of waste collection trolleys
- Flooring is of tiles with slope so as to easy the cleaning of the area
- Center has good ventilation through the use of exhaust fan and by use of wire meshes window
- Central storage station ensured for fire hazard like installation of fire extinguisher, smoke detector etc.
- Water supply is provided for cleaning and washing of this station containers. The drainage from the storage and washing area is routed to the effluent treatment plant (ETP).
- Sign boards indicating relevant details such as contact person and the telephone number is provided.
- It is ensured that no general waste is stored in the central waste collection area.
- Healthcare facilities need to maintain the record of waste generated and handed over to the authorized recycles.
- Centre is protected from stray animals in the academia and has installed cattle traps at main gate
- Pest control program is in place

### Colour codes for Biomedical waste collection and Packing

				
<ul style="list-style-type: none"> <li>▪ Human and animal waste</li> <li>▪ Soiled wastes, Discarded or expired medicines</li> <li>▪ Chemical wastes,</li> <li>▪ Blood and</li> </ul>	<ul style="list-style-type: none"> <li>▪ Contaminated waste (recyclable)</li> </ul>	<ul style="list-style-type: none"> <li>▪ Sharps including metals</li> <li>▪ Needles</li> <li>▪ Scalpels</li> <li>▪ Blades</li> </ul>	<ul style="list-style-type: none"> <li>▪ Broken and contaminated glass including vials and ampoules</li> <li>▪ Metallic body implants</li> </ul>	<ul style="list-style-type: none"> <li>▪ Food items</li> <li>▪ Papers / paper plates,</li> <li>▪ Water bottles, etc</li> </ul>

## References

- <https://kspcb.gov.in/aboute.html> (Bio-Medical Waste Management Rules, 2016)
- <https://kspcb.gov.in/aboute.html> (Construction & Demolition Waste Management Rules, 2016)
- <https://kspcb.gov.in/aboute.html> (E-waste Management Rules 2016)
- <https://kspcb.gov.in/aboute.html> (Solid Waste Management Rules, 2016)
- <http://www.barc.gov.in/randd/rwm.html> (Bhabha Atomic Research Centre)

## 4. Authority


The Vice-Chancellor, Registrar & Deputy Registrar of JSS Academy of Higher Education & Research and Principals of the constituent colleges and Heads of the departments holds delegated authority and is responsible for all aspects of this policy.

## 5. Date of implementation:

This policy will come into immediate effect from 01.01.2022

## 6. Date of revision:

01.01.2024



**REGISTRAR**  
JSS Academy of Higher Education & Research  
Sri Shivarathreeshwara Nagara  
Mysuru-570015, Karnataka, India



## Infrastructure policy

### I. Preamble:

- JSSAHER is committed to develop & provide “Infrastructure” for the growing requirements of its constituent units and to meet the Statutory body/ State/ National /International standards for the pursuit of Academic research & administrative requirement maintain standards & its educational excellence.
- This shall be in alignment with the standards/ requirements of waste management, energy conservation & recycling, water management, smart campus/campus maintenance ... any other policies in place or created and implemented from time to time.

### II. Scope/Objective

- To facilitate the stakeholders with the growing requirements of the academic & research formats and maintain the high standards in its educational pursuit.
- Need assessment to be made and submit the proposal
- Shall design & plan for futuristic infrastructure compatible for next one or two decades
- Resource Mobilization planning to be made in consultation with competent authority.
- All statutory body permission to be sought periodically/ from time to time.
- Such infrastructure shall have the approach towards ecofriendly, cost effective, energy efficient with the provisions for re-cycling mechanism and considered throughout the process of infrastructure plan, Design, execution & remodeling.

- Conservation, restoration, reuse, remodeling of the infrastructure be given emphasis as far as possible.
- During its course - priority to be given for the safety, Health, Comfort of the occupants.
- All \*drawings shall be maintained in soft & hard copies duly numbered for easy retrieval and reference. (\*Planning, statutory body, approved drawings, Construction drawings, modification drawings, as built drawing, remodeling drawing....)

### **III. Policy/ Procedure**

- All infrastructure provided shall be well maintained with due monitoring by the Head of the Institution of the user end and administrative departments of the Institution.
- All Electrical lines be concealed and shall ensure safety and security all the time.
- Decent/comfortable Physical infrastructure with reference to space, furnitures, washroom, lighting, aeration, accessibility ..... be provided including for physically challenged.
- Identify the suitable contractor/partner for execution/deliverables of the identified work.
- Agreement to be executed with the right partner
- Optimal utilization of resources to be ensured
- Natural resources like; light, rainwater, wind may be optimally utilized & adopt use appropriate energy conservation methods as far as possible.
- Ensure all renovation/new built standards (like Indian infrastructure code)
- Infrastructure monitoring & development committee shall periodically review

#### **Broad Guidelines: -**

1. Constructor antecedent and capability for delivering the work entrusted shall be ensured by the committee before entrustment of the work to the contractors.

2. Periodically all infrastructure be maintained ensure its maintenance on Building maintenance guidelines (BMG).
  - a. BMG shall be provided for All terrace, facade, building cracks & painting, water storage tank maintenance. Periodically BMG be updated or as and when required.
  - b. BMG may be in alignment with the MVP/JSSAHER maintenance guidelines and circulars issued from time to time and ensure the following broad activities and its functionality are intact.
    - Building painting-Once in 5 Years
    - Bathroom fittings- Service once in a year/as & when required
    - Bathroom wall & flooring tiles – Epoxy joints once in 2-3 year
    - Electrical fittings (Ac, Fans, lights, Switches)- periodically (Quarterly basis)
    - UGD lines, terrace, Chejja – once in a month
    - Waste management – Follow the guideline in place modified from time to time
    - Infrastructure maintenance – follow the Housekeeping Guidelines
    - Plumbing line – CPVC lines.

#### **IV. Authorities enforcing the policy**

The Vice Chancellor, The Registrar and Deputy Registrar (Sr.Grade), Resident Engineer I/c of JSS Academy of Higher Education & Research for implementation of Infrastructure policy.

#### **V. Date of implementation**

This policy will come into immediate effect from 01.01 .2022

#### **VI. Date of revision**

01.01.2024

  
**REGISTRAR**