



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

COMPENDIUM ON SDG-15

Life on Land

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



2023-24

TABLE OF CONTENTS

S.r	Content	Page Number
1	Introduction	3
2	A glance of efforts	4-17
3	Publication	18-19
4	Book chapters	20
5	Outreach activity	21-33

Introduction

Earth's ecosystems are vital for sustaining human life, they contribute to over half of global GDP and encompass diverse cultural, spiritual, and economic values. However, the world is facing a triple crisis of climate change, pollution and biodiversity loss. Sustainable Development Goal 15 seeks to protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss.

The nine “outcome targets” include: Conserve and restore terrestrial and freshwater ecosystems; end deforestation and restore degraded forests; end desertification and restore degraded land; ensure conservation of mountain ecosystems, protect biodiversity and natural habitats; protect access to genetic resources and fair sharing of the benefits; eliminate poaching and trafficking of protected species; prevent invasive alien species on land and in water ecosystems; and integrate ecosystem and biodiversity in governmental planning. The three “means of achieving targets” include: Increasing financial resources to conserve and sustainably use ecosystem and biodiversity; financing and incentivizing sustainable forest management; combating global poaching and trafficking.

Humans depend on earth and the ocean to live. The human diet is composed 80% of plant life, which makes agriculture a very important economic resource. Plant life provides 80 percent of the human diet, and we rely on agriculture as an important economic resources. Forests cover 30 percent of the Earth's surface, providing vital habitats for millions of species, and important sources for clean air and water, as well as being crucial for combating climate change. Terrestrial ecosystems provide a series of goods, raw materials for construction and energy, food and a series of ecosystem services including the capture of carbon, maintenance of soil quality, provision of habitat for biodiversity, maintenance of water quality, as well as regulation of water flow and erosion control, therefore contributing to reduce the risks of natural disasters such as floods and

landslides, regulate climate and maintain the productivity of agricultural systems. Maintaining those ecosystems greatly support climate change mitigation and adaptation efforts. The protection of our land resources must be a high priority if we are to make a transition to a more sustainable society. adequate approach for promoting the conservation and sustainable use of biodiversity in various sectors, including agriculture, forestry, fisheries and tourism, among others, which are interconnected with food security, economic growth, human health, the improvement of living conditions and the enjoyment of a healthy environment. So maintaining biodiversity enhances these services.

We need to mobilize and significantly increase financial resources from all sources to conserve and sustainably use biodiversity and ecosystems. Enhancing efforts to combat poaching and trafficking of protected species, mobilizing significant resources from all sources and at all levels and having adequate management for conservation and reforestation are need of the hour. By 2030, we have to restore degraded land and soil, including land affected by desertification, drought and floods, and strive to achieve a land degradation-neutral world. With this holistic approach we can protect and restore life on land. All these efforts combined aim to ensure that the benefits of land-based ecosystems, including sustainable livelihoods, will be enjoyed for generations to come.

Objectives with regard to achieving SDG-15

1. Alternatives to animal testing
2. Medicinal plants and uses
3. 3R's Principles in research
4. CPCSEA and ICH guidelines for conducting research.
5. Green initiatives to save environment

Infrastructure

Centre For Experimental Pharmacology and Toxicology JSS Academy of Higher Education & Research (JSS AHER) has endowed an extensive ABSL2 preclinical facility “Centre for Experimental Pharmacology and Toxicology” to support the comprehensive research activities of its constituent colleges (medical, dental, pharmacy, life sciences) and departments. The facility is licensed (261/PO/ReBi/S/2000/CPCSEA) by Committee for the Purpose of Control and Supervision of Experiments on Animals (CPCSEA), Government of India, to conduct experiment on small animal models and breeding for in-house use. The vivarium is located in a serene and peaceful ambiance within the University campus. A built space of 7000 sq ft primarily constitutes rodent barrier facility, small animal clinicopathology labs and supportive suites. Animal facility plant is built in compliance with guidelines of National Institutes of Health (NIH), USA and CPCSEA, Government of India

Physical Plant

- PT is a BSLII barrier facility with dual corridors, temperature, humidity, light, noise and differential air pressure monitored 24X7
- Epoxy terrazzo coated floor, concrete masonry walls, and moisture resistant ceilings
- Facility is provisioned with isolated ventilated cages
- Clinicopathology, test item control office, archive on site

Animal care is monitored on a daily basis including weekends and holidays

- Health monitoring within the animal facilities is ensured through a sentinel program, supplier reports, and environmental testing by trained veterinarians
- Sterilised Bedding, food and portable mineral water
- Consistent healthcare from study initiation to study completion
- Practice in force on humane endpoints policy to minimize pain and discomfort

Experience with and equipped to conduct studies in a wide array of species

- Rat
- Mouse
- Rabbit
- Guinea Pig

Scientific services

With cutting edge technologies in scientific research along with wide range of experienced professionals, CPT alliances with its partners to bring forth endless variety of disease models and preclinical services in the following areas- Pharmaceuticals, Medical devices, Agrochemicals and Pesticides, Food products and Nutraceuticals, Folklore Remedies

Green campus initiatives

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. 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.

- Rain water harvesting and retention facility in the campus
- Collection of storm water and every effort is made to keep these catchments clean.
- Save water reminders

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Collaborations

International

- NIAAA, NIH, USA
- Macquarie University, Australia
- Sultan Qaboos University, Oman
- University of Saskatchewan, Canada
- Seton Hall University, USA
- University of Johannesburg

National

- CSIR Central Food Technological Research Institute, Mysuru
- CSIRIITR, Lucknow
- IIT, Madras
- Department of Chemistry, University of Delhi
- National Institute of Mental Health and Neurosciences (NIMHANS), Bangalore
- Birla Institute of Technology and Science, Hyderabad
- Annamalai University, Tamil Nadu

Biochemistry lab



PPE changing rooms



Rodent room



Clean corridor



Cage autoclave



IVC cage



Greenery in campus



Smart Campus Initiatives:

- Replacement of 50% of regular bulbs with LED bulbs
- Landscaping around the college
- Providing water purifiers in every floor of the institution
- Initiation of G health Digital store software
- Installation of two effluent treatment plants
- Software for patient management and payment

Biodiversity Conservation Efforts

The College works directly to maintain and extend the existing ecosystems in the Nilgiris Biosphere. The biodiversity of medicinal plants is conserved within the college premises. The college campus possesses a lush green campus with seasonal trees and maintenance of the garden has been done from time to time to keep it neat and clean. The indicators to assess the efforts for meeting targets of SDG 15 are:

- Biodiversity Conservation Efforts
- Environmental Education and Awareness
- Waste Management
- Collaboration with Local Communities

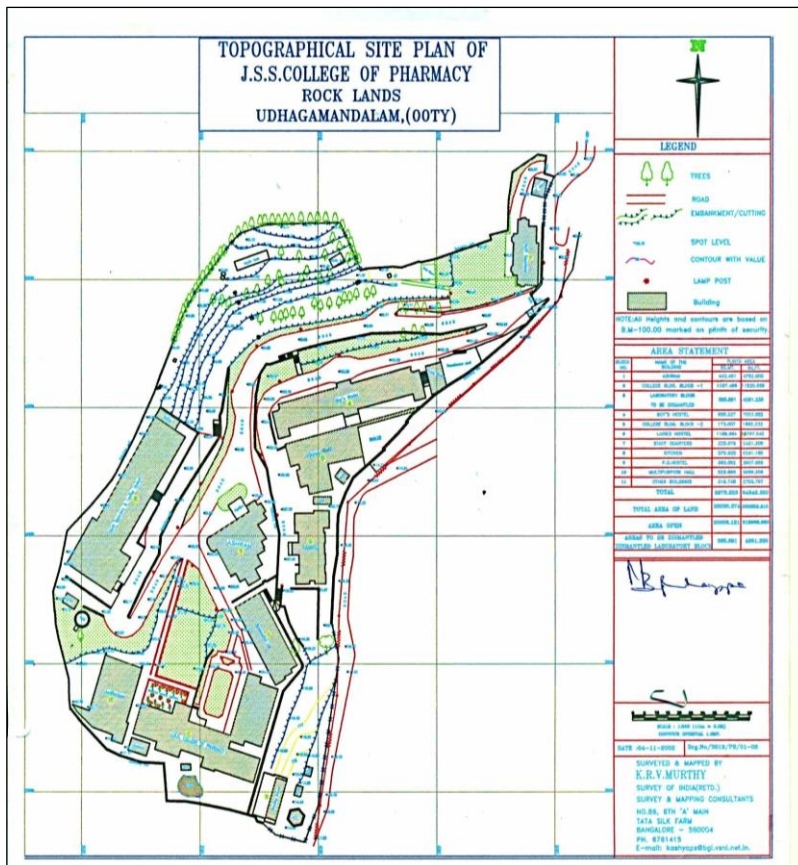
BIODIVERSITY CONSERVATION EFFORTS

Green resilience and Plastic free campus

The total land area of JSSCP, Ooty campus is 6.45 acres and out of this 36,032 sq.mt is occupied with constructed buildings. Whilst, the existing infrastructure endorse our institution as a conducive place for academic learning which provides a quality education in a clean, safe and comfortable environment, since the inception, JSSCP has been working very active in establishing the state of the art, SMART campus.



Green Cover in Campus



Topographical Map of Green cover in the campus

As per the Policy of Nilgiris District, expansion of Buildings is planned in accordance with Ministry of Forestry and HADP of Nilgiris and prior permission is taken for the same.

The government policy on this is as follows- <https://nilgiris.nic.in/plastic-free-nilgiris/#introduction>

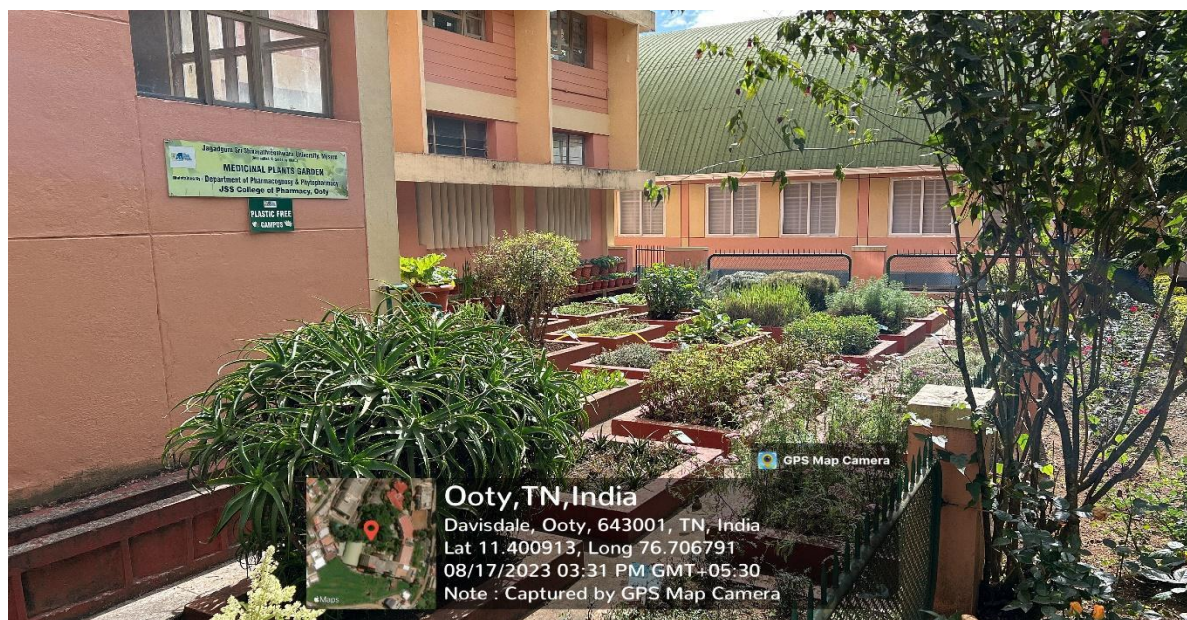
Medicinal Plants and Trees in Campus

In our college, biodiversity conservation efforts are integrated into our practices to raise awareness among students. Green spaces and native medicinal plants are maintained on campus to support local flora and fauna. Sustainable practices are embraced, promoting recycling and responsible waste management. A total of 86 species of trees and plants are on the campus.

No Trees on the campus are cut down and green resilience is promoted by the College Smart Campus committee.




Cultivation of Herbal Plants for Research purposes

The college has herbal garden where many medicinal plants are displayed which provides the fresh air and relives from the ailments.





Medicinal Plants Garden

 PRINCIPAL J.S.S. COLLEGE OF PHARMACY Rockland's, Ootacamund - 643 001	 B. Shivaramakrishnan Coordinator Smart Campus-JSSCPO	 Dr. B. Babu NSS Programm Officer JSS College of Pharmacy Rock lands Udhagamandalam-643001 The Nilgiris
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International

- NIAAA, NIH, USA
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National

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Biochemistry lab



PPE changing rooms



Air shower entry



Rodent room



Clean corridor



Cages autoclave



IVC cage



Stereotaxic apparatus

Green Life on the campus







Related Research Grants

1. Geriatric chronic cerebral hypo perfusion: Role of short chain fatty acids supplementation on gut-brain axis function, protein misfolding, autophagy and cognition. Funded by Public Health and Nutrition Division (2020-2024), Department of Biotechnology, Government of India. [On-going study-Amount 50 Lakhs]

Related Publications

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2. Niloy, N.; Hediya, T.A.; Vichitra, C.; Sonali, S.; Chidambaram, S.B.; Gorantla, V.R.; Mahalakshmi, A.M. Effect of Cannabis on Memory Consolidation, Learning and Retrieval and Its Current Legal Status in India: A Review. *Biomolecules* **2023**, *13*, 162.
3. Hediya, T.A.; Vichitra, C.; Anand, N.; Bhaskaran, M.; Essa, S.M.; Kumar, P.; Qoronfle, M.W.; Akbar, M.; Kaul-Ghanekar, R.; Mahalakshmi, A.M. Protective Effects of Fecal Microbiota Transplantation against Ischemic Stroke and Other Neurological Disorders: An Update. *Frontiers in Immunology* **2024**, *15*, 1324018.
4. Ray, B.; Tuladhar, S.; Nagaraju, P.G.; Shivalinga, A.; Mahalakshmi, A.M.; Priyadarshini, P.; Song, B.-J.; Chidambaram, S.B. Telmisartan Protects Mitochondrial Function, Gait, and Neuronal Apoptosis by Activating the Akt/GSK3 β /PGC1 α Pathway in an MPTP-Induced Mouse Model of Parkinson's Disease. *J. Integr. Neurosci.* **2024**, *23*, 29, doi:10.31083/j.jin2302029.
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8. Deyang, T.; Baig, M.A.I.; Dolkar, P.; Hediya, T.A.; Rathipriya, A.G.; Bhaskaran, M.; PandiPerumal, S.R.; Monaghan, T.M.; Mahalakshmi, A.M.; Chidambaram, S.B. Sleep Apnoea, Gut Dysbiosis and Cognitive Dysfunction. *The FEBS Journal* **2024**, *291*, 2519–2544, doi:10.1111/febs.16960.
9. Chandrasekaran, V.; Hediya, T.A.; Anand, N.; Kendaganna, P.H.; Gorantla, V.R.; Mahalakshmi, A.M.; Ghanekar, R.K.; Yang, J.; Sakharkar, M.K.; Chidambaram, S.B. Polyphenols, Autophagy and Neurodegenerative Diseases: A Review. *Biomolecules* **2023**, *13*, 1196.
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- in mice by promoting apoptosis and cell cycle arrest and by impeding tumor angiogenesis. *Cancers (Basel)*. 2023 Oct;15(19):4833.
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 14. Shalini R, Chandrasekar MJN, Nanjan MJ, Madhunapantula SV, Karnik M, Selvaraj J, Ganesh GNK. 1-Tetracosanol isolated from the leaves of *Eupatorium glandulosum*, accelerates wound healing by expressing inflammatory cytokines and matrix metalloproteinase. *J Ethnopharmacol*. 2023 Oct;315(1):115424.
 15. Kumar H, Chand P, Pachal S, Mallick S, Jain R, Madhunapantula SV, Jain V. Fisetin-loaded nanostructured lipid carriers: formulation and evaluations against advanced and metastatic melanoma. *Mol Pharm*. 2023 Oct;20(10):3639-3651.
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 20. Kalabharathi HL, Mariam A, Doddawad VG, Shivananda S, Sanjay CJ. Evaluation of anticonvulsant activity of *Harpagophytum procumbens* leaves (Devil's claw) in Swiss albino mice. *International Journal of Academic Medicine*. 2023 Jul 1;9(3):132-7.
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27. Sunil Kumar MS, Raghavendra TO, Shashank M, Ramu R, Mallikarjunaswamy C, Harini R, et al. Limonia acidissima fruit juice mediated eco-friendly synthesis of perovskite ZnSnO₃ nanoparticles: Applications to photocatalytic, electrochemical, antioxidant and antibacterial activities. *Inorganic Chemistry Communications*. 2024 Jul;165:112476

Books (Authored and Edited)

1. Chidambaram, S.B., Essa, M., Qoronfleh, M.W. *Laboratory Animal Models- Introduction to Toxicological Screening Methods and Good Laboratory Practice*. Springer, Singapore.

Programs aligning to SDG 15

Fire Safety Training



World Environment Day- 2023



National Service Scheme (NSS) in association with **Institutional Innovation Council (IIC)**, JSSDCH conducted competitions for UG and PG students to celebrate the “**World Environment Day- 2023**” on 19th June 2023. The Program was coordinated by Dr Thippeswamy HM, NSS Program Officer, Reader, Department of Public Health Dentistry and Dr Premalatha BR, IIC Member, Reader, Department of Oral Pathology and Microbiology. The details of the competitions held and the list of winners are as follows:

Essay competition: Topic: Management of plastic waste

1st prize: Kulsum Fathima- BDS II yr

2nd prize: Dr Ankita Chhabrani- MDS II yr, Dept of Periodontology

3rd prize: Sagarika SN- BDS III yr

Idea hackathon: Elimination of plastics-A step towards Green Dentistry

1st prize: Aanchal S Iyengar- BDS III yr, Meghana BV -BDS I yr

2nd prize: Swasthishree P - BDS III yr, Dimple Rajesh- BDS III yr

3rd prize: Tejaswini Agarwal, Harshita Prem- House Surgeons.

JSSDCH congratulates all the winners for their enthusiastic participation and promotion of the cause.

Eco club 2023



“World Environment Day-2023” was enthusiastically celebrated by the student members of Eco club -JSSDCH under the leadership of Dr Premalatha BR and Dr Thippeswamy HM on 19th June 2023 by displaying their creativity in the form of e-posters and drawings on the topic of “Environment Conservation”. The posters were exhibited on the college notice boards for appreciating the efforts made by students and to spread awareness about the cause.

Complementing the academic curriculum, the department also encourages to take part in various community activities contributing towards the goal ‘Life on Land’. The below information gives clear insights into the department initiatives towards this goal.



Celebrating the World's Environment 2024 theme, land restoration, halting desertification and building drought resilience under the slogan "Our land. Our future, the department had celebrated the event with students and faculty.



List of activities planned to achieve the set objectives

1. Conducting awareness programs on green initiatives like rainwater harvesting and use of solar energy
 2. Seminar on alternatives to animal experimentation
 3. Reduce and replace usage of plastics
 4. Training students in proper waste disposal practices and sensitizing them on using the services of biomedical disposal certified agencies.
 5. Encourage students for planting trees and animal adoption.
- Poster competition, essay writing competition, role play on World Environment Day celebration

List of activities promoting Life on Land

Vanamahotsava Celebration:



NSS Unit JSS College of Pharmacy, Mysuru in association with Karnataka Forest department and department of Pharmacognosy celebrated Vanamahotsava on 7th July 2023. Van Mahotsav is an annual one-week tree-planting festival in India which is celebrated in the first week of July to spread awareness about forests and promote tree plantation and environmental conservation. The first week of July is believed to be the right time for planting trees in most parts of India as it coincides with the monsoon. During the vanamahotsava the jackfruit tree was planted.

Plant Sapling:



NSS Unit JSS College of Pharmacy in association with department of Pharmacognosy Organized Plant sapling on the occasion of Golden Jubilee Alumni Meet. During this occasion the herbal and flowering plants were planted by alumni of our college on 12th August 2023

Plant Sapling at Taripura Village:



The NSS Unit of JSS College of Pharmacy, Mysuru on 3rd March 2024 Organized Plant Saplings at Rama Manidar temple at Taripura Village, Shri Rangapattana Taluk, Mandya District The main aim of this occasion was to prevent & creates awareness on the raised global warming to protect our nature and planet earth. On this occasion everyone on the planet to get involved in environment friendly activities. People come together to pledge towards building a greener planet. Keeping this aim in view. The event was conducted successfully with wholehearted participation and awareness about plants. A Total of 70 Plants were planted in taripura village.

Plant Saplings on the Occasion of World Environment Day:



The National Service Scheme (NSS Unit) JSS College of Pharmacy, Mysuru Organized Plant Saplings on the occasion of World Environmental day (5th June 2023) with the theme of Solution to the Plastic Pollution. The main aim of this occasion was to prevent & creates awareness on the raised global warming to protect our nature and planet earth. It is a day that reminds every one on the planet to get involved in environmentally friendly activities. People come together to pledge towards building a greenery planet. The event was conducted successful with the over hearted participation about plants. Dr. G V Pujar, Vice Principal, JSS College of Pharmacy, Mysuru, Mrs. Divya Assistant Administrative Officer, Dr K. L Krishna NSS Coordinator JSS Academy of Higher Education and Research, NSS Programme Officer, Teaching and Non- Teaching staff were present during the occasion.

Educational Programmes

The College works directly to maintain and extend the existing ecosystems in the Nilgiris Biosphere. The biodiversity of medicinal plants is conserved within the college premises. The college campus possesses a lush green campus with seasonal trees and maintenance of the garden has been done from time to time to keep it neat and clean. The indicators to assess the efforts for meeting targets of SDG 15 are:

- Biodiversity Conservation Efforts
- Environmental Education and Awareness
- Waste Management
- Collaboration with Local Communities

Environmental Education and Awareness

Raising awareness about the importance of biodiversity, land conservation, and sustainable land use through educational programs and public campaigns mobilizes support for SDG 15. In addition, promoting responsible forest management practices, such as selective logging and reforestation, ensures the continued provision of ecosystem services and economic benefits from forests.

In this regard, we have academic programmes which promotes the conservation of plants and land. At Undergraduate level in B Pharm prescribed by Pharmacy Council of India– Environmental Sciences Subject is taught for conservation of land. Screenshot of it is below and syllabus is attached.

BP 206 T. ENVIRONMENTAL SCIENCES (Theory)	
	30 hours
Scope: Environmental Sciences is the scientific study of the environmental system and the status of its inherent or induced changes on organisms. It includes not only the study of physical and biological characters of the environment but also the social and cultural factors and the impact of man on environment.	
Objectives: Upon completion of the course the student shall be able to:	
<ol style="list-style-type: none"> 1. Create the awareness about environmental problems among learners. 2. Impart basic knowledge about the environment and its allied problems. 3. Develop an attitude of concern for the environment. 4. Motivate learner to participate in environment protection and environment improvement. 5. Acquire skills to help the concerned individuals in identifying and solving environmental problems. 6. Strive to attain harmony with Nature. 	
Course content:	
Unit-I	10hours
The Multidisciplinary nature of environmental studies	
Natural Resources	
Renewable and non-renewable resources:	
Natural resources and associated problems	
a) Forest resources; b) Water resources; c) Mineral resources; d) Food resources; e) Energy resources; f) Land resources: Role of an individual in conservation of natural resources.	
Unit II	10hours
Ecosystems	
<ul style="list-style-type: none"> ▪ Concept of an ecosystem. ▪ Structure and function of an ecosystem. ▪ Introduction, types, characteristic features, structure and function of the ecosystems: Forest ecosystem: Grassland ecosystem: Desert ecosystem: Aquatic ecosystems (ponds, streams, lakes, rivers, oceans, estuaries) 	

- More details at Page 71 of the Regulatory body approved syllabus- https://www.pci.nic.in/pdf/Syllabus_B_Pharm.pdf

The College offers post graduate programme- Masters in Pharmacy - Pharmacognosy aimed at promotion conservation and sustainable utilisation of the land, including forests and wildlife.

- Website of Pharmacognosy Department- <https://jssuni.edu.in/jssaher/college-of-pharmacy-ooty/departament-pharmacognosy-home.html>

The M.Pharm in Pharmacognosy has curriculum which elaborates on the conservation of biospheres of medicinal value and the importance of cultivation of such rare medicinal plants.

ADVANCED PHARMACOGNOSY - I
(MPG 102T)

SCOPE

To learn and understand the advances in the field of cultivation and isolation of drugs of natural origin, various phytopharmaceuticals, nutraceuticals and their medicinal use and health benefits.

OBJECTIVES



- Upon completion of the course, the student shall be able to know the,
- advances in the cultivation and production of drugs
 - various phyto-pharmaceuticals and their source, its utilization and medicinal value.
 - various nutraceuticals/herbs and their health benefits
 - Drugs of marine origin
 - Pharmacovigilance of drugs of natural origin

THEORY

60 Hrs

1. Plant drug cultivation: General introduction to the importance of 12
Pharmacognosy in herbal drug industry, Indian Council of Hrs
Agricultural Research, Current Good Agricultural Practices,
Current Good Cultivation Practices, Current Good Collection
Practices, Conservation of medicinal plants- Ex-situ and In-
situ conservation of medicinal plants.

More details in this link - https://www.pci.nic.in/pdf/Syllabus_M_Pharm.pdf

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Local Community Programmes

The College works directly to maintain and extend the existing ecosystems in the Nilgiris Biosphere. The biodiversity of medicinal plants is conserved within the college premises. The college campus possesses a lush green campus with seasonal trees and maintenance of the garden has been done from time to time to keep it neat and clean. The indicators to assess the efforts for meeting targets of SDG 15 are:

- Biodiversity Conservation Efforts
- Environmental Education and Awareness
- Waste Management
- Collaboration with Local Communities

COLLABORATION WITH LOCAL COMMUNITIES

Nilgiris Biosphere Medicinal Plants Exhibition


The College as a body always extends support to organise events aimed at promotion conservation and sustainable utilisation of the land, including forests and wildlife. The Department of Pharmacognosy of the college annually organizes such events to promote the conservation of medicinal plants in the Nilgiris Biosphere.



Department of Pharmacognosy has won 9 Prizes (1 Rolling Cup, 4 First, 2 Second, 1 Third and, 1 Special Prize) in the 125th Flower Show & 175th Anniversary @ Ooty 200 competitions held during 19th - 23rd May 2023 at Govt. Botanical Garden, Ooty and won 3 Prizes (2 First + 1 Special Prize) in the Rose Show Competitions in various Classification of Competition like Arrangement of Roses (Special Prize), Rose Rangoli (I Prize), and Rose Rangoli (I Prize). Also, a handy booklet on “Food Adulteration and Safety” consists of extensive information about adulteration and identification in selected food materials authored by Mr. G Ramu & Professor SP Dhanabal has been exhibited.



A One-Day International conference on “Exploring the Potential of Ayurveda in Promoting the Well-being of Humans, Animals, Plants and Environment” was conducted on 28-11-2023 with the theme of “Ayurveda for everyone on every day” by JSS Academy of Higher Education & Research, Mysore, India & South Kazakhstan Medical Academy.

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Biomedical Waste Disposal Information

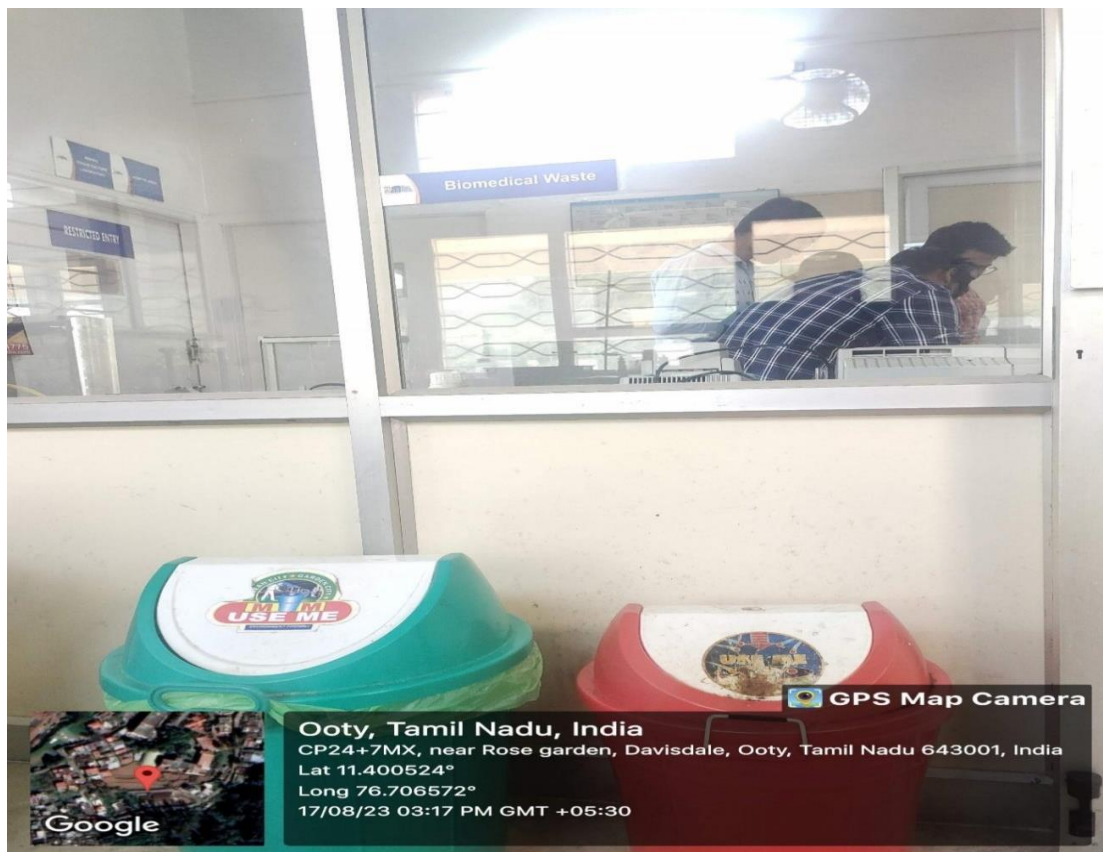
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Waste Management

Managing waste in a smarter way is the most important aspect of any organization. For this management for the waste we have Bio-waste management, initiative of plastic free campus with no plastic bottles, Rainwater harvesting management for the reduction of water waste to save more

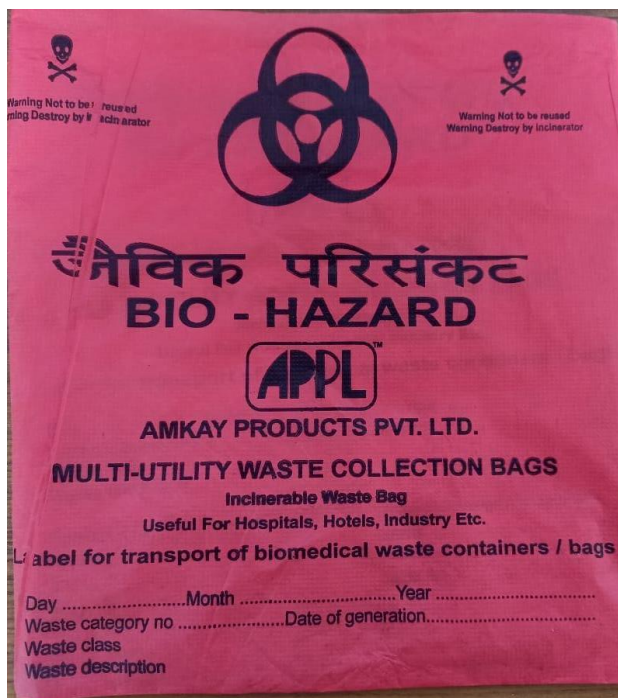
water. Mechanical Chimneys, Fume hoods for chemical reactions and Bio-safety cabinets (Class II type A/B3).



The College follows the Government Gazette on Plastic Free zone in the whole Nilgiris District. The Enlisted items are completely banned within the campus. On, MAY 09, 2018 The Government Policy is abided by the College strictly and no single-use plastic items are used on the campus.

- <https://nilgiris.nic.in/plastic-free-nilgiris/#banned>
- <https://cdn.s3waas.gov.in/s339461a19e9eddfb385ea76b26521ea48/uploads/2022/03/2022032483.pdf>

The garbage waste disposal by the Municipality collects recycle plastic items from Separate bins placed around the campus.



The College has a Biomedical Waste Disposal certificate in accordance with the Nilgiris District Municipality Office. The sanitation team collects the biomedical waste from the campus for incineration process at the Centralized facility at the Government.



Membership Certificate

The University also publishes the Waste Disposal in a detailed webpage given in the link.
<https://jssuni.edu.in/jssaher/jssaher-infra/institutional-biosafety-committee/ibsc-home.html>



**SOCIETY FOR BIO - MEDICAL WASTE MANAGEMENT (REGD.)
& IMA - NILGIRIS BRANCH**
REGD No. 72/2010

No. 3449 Date 14.07.2022

Received with thanks from Dr. / Messers J.S.S. College of Pharmacy
a sum of Rupees Fourteen Thousand Only
towards Membership fee / Subscription / donation / by cash / *Cheque / DD / for the period
July 2023 to June 2024

For SOCIETY FOR BIO - MEDICAL WASTE MANAGEMENT

₹ 14,000/- [Signature]
Hon. Treasurer / Hon Secretary

 PRINCIPAL J.S.S. COLLEGE OF PHARMACY Rockland's, Ootacamund - 643 001	 B. Shivaramakrishnan Coordinator Smart Campus-JSSCPO
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1. Anti-Staphylococcal Activity of Acinetobacter Schindleri from Soil Microbiota Obtained from Kalapet Region of Pondicherry
2. Effect of Microbial consortia, VAM, and seaweed extract on growth and development of brinjal (Solanum melongena) plant
3. Anti-Staphylococcal activity of Bacillus safens is isolated from Soil microbiota obtained from Kalapet region of Pondicherry Isolation and Characterization of Plastic Degradation using bacteria in Garbage waste soil