Education for Sustainable Development Goals

JSS ACADEMY OF HIGHER EDUCATION & RESEARCH

Teaching & Learning of Activities in Achieving UN Sustainable Development Goals

Teaching & Learning Objective Handbook
SDG-7- Affordable and Clean Energy

2022

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PREFACE

The United Nations' 2030 Agenda for Sustainable Development was adopted Globally in September 2015. It is underpinned by 17 Sustainable Development Goals (SDGs) and 169 targets and applies to every country. It helps people from various counties to work together to promote sustained and inclusive economic growth, social development and environmental protection and to benefit all, including future generations. The 2030 Agenda for Sustainable Development sets forth "a plan of action for people, planet and prosperity " and "seeks to strengthen universal peace in larger freedom".

This universal agenda requires an integrated approach to sustainable development and collective action, at all levels, to address the challenges of our time, with an overarching imperative of 'leaving no one behind' and addressing inequalities and discrimination as the central defining feature. Many countries , institutions and organisations have already started to translate the new agenda into their development plans, strategies and visions.

JSSAHER'S Social Responsibility is an approach of ethical and intelligent management, which involves both its impact on its human, social and natural context and its active role on the promotion of Sustainable Human Development of the country. Within this approach, "Sustainable Campus" is a strategy that strives to reduce the ecological footprint of the Institution via a rational use of resources and to educate the JSSAHER community on the ethics of sustainability.

Supporting the JSSAHER'S Social Responsibility, the SDG Hand Book explains the SDGs and their connection between the various goals and targets of JSSAHER . It provides a blueprint to help, identify, implement and achieve the Sustainable Development Goals (SDGs) at JSS AHER.

As the process moves towards implementation, there is a need to address the scope and systemic nature of the 2030 Agenda and the urgency of the challenges. This requires a wide range of tools and science-based analysis to navigate that complexity and to realise the ambition. JSSAHER having in place effective governance systems, institutions, partnerships, and intellectual and financial resources favouring effective, efficient and coherent approach for implementation of SDGs.

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https://www.jssuni.edu.in/JSSWeb/WebShowFromDB.aspx?MID=11011&CID=0&PID=10001

PREAMBLE

Education for Sustainable Development Goals

By 2030, ensure that all learners acquire knowledge and skills needed to promote sustainable development, including, among others, through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non- violence, global citizenship and appreciation of cultural diversity and of culture's contribution to sustainable development.

Source: **The Sustainable Development Goals Report 2022**

http://www.un.org/sustainabledevelopment/sustainable- development-goals

Access to Learning objectives for SDG-7

Education for Sustainable Development Goals: learning objectives - UNESCO Digital Library

United Nations, n.d.

OBJECTIVE OF JSS ACADEMY OF HIGHER EDUCATION & RESEARCH TO PROMOTE EDUCATION FOR SUSTAINABLE DEVELOPMENT GOALS OF THE UNITED NATION IS TO MATCH THE TEACHING & LEARNING ACTIVITIES WITH SUSTAINABLE DEVELOPMENT GOALS THROUGH CURRICULUM DEVELOPMENT, ENHANCED RESEARCH AND EXTENDED OUTREACH ACTIVITIES.

INTRODUCTION

The Sustainable Development Goals – an ambitious and universal agenda to transform our world

On 25 September 2015, the UN General Assembly adopted the 2030 Agenda for Sustainable Development (UN, 2015). This new global framework to redirect humanity towards a sustainable path was developed following the United Nations Conference on Sustainable Development (Rio+20) in Rio de Janeiro, Brazil in June 2012, in a three-year process involving UN Member States, national surveys engaging millions of people and thousands of actors from all over the world.

At the core of the 2030 Agenda are 17 Sustainable Development Goals (SDGs). The universal, transformational and inclusive SDGs describe major development challenges for humanity. The aim of the 17 SDGs is to secure a sustainable, peaceful, prosperous, and equitable life on earth for everyone now and in the future. The goals cover global challenges that are crucial for the survival of humanity. They set environmental limits and set critical thresholds for the use of natural resources. The goals recognize that ending poverty must go together with strategies that build economic development. They address a range of social needs including education, health, social protection, and job opportunities while tackling climate change and environmental protection. The SDGs address key systemic barriers to sustainable development such as inequality, unsustainable consumption patterns, weak institutional capacity, and environmental degradation.

For the goals to be reached, everyone needs to do their part: governments, the private sector, civil society and every human being across the world. Governments are expected to take ownership and establish national frameworks, policies, and measures for the implementation of the 2030 Agenda.

A key feature of the 2030 Agenda for Sustainable Development is its universality and indivisibility. It addresses all countries – from the Global South and the Global North – as target countries. All countries subscribing to the 2030 Agenda are to align their own development efforts with the aim of promoting prosperity while protecting the planet to achieve sustainable development. Thus, with respect to the SDGs, all countries can be considered as developing and all countries need to take urgent action.

The 17 Sustainable Development Goals (SDGs)

No Poverty – End poverty in all its forms everywhere

Zero Hunger – End hunger, achieve food security and improved nutrition and promote sustainable agriculture

Good Health and Well-Being – Ensure healthy lives and promote well-being for all at all ages

Quality Education – Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all

Gender Equality – Achieve gender equality and empower all women and girls

Clean Water and Sanitation – Ensure availability and sustainable management of water and sanitation for all

Affordable and Clean Energy – Ensure access to affordable, reliable, sustainable, and clean energy for all

Decent Work and Economic Growth – Promote sustained, inclusive, and sustainable economic growth, full and productive employment and decent work for all

Industry, Innovation and Infrastructure – Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation

Reduced Inequalities – Reduce inequality within and among countries

Sustainable Cities and Communities – Make cities and human settlements inclusive, safe, resilient and sustainable

Responsible Consumption and Production – Ensure sustainable consumption and production patterns

Climate Action – Take urgent action to combat climate change and its impacts

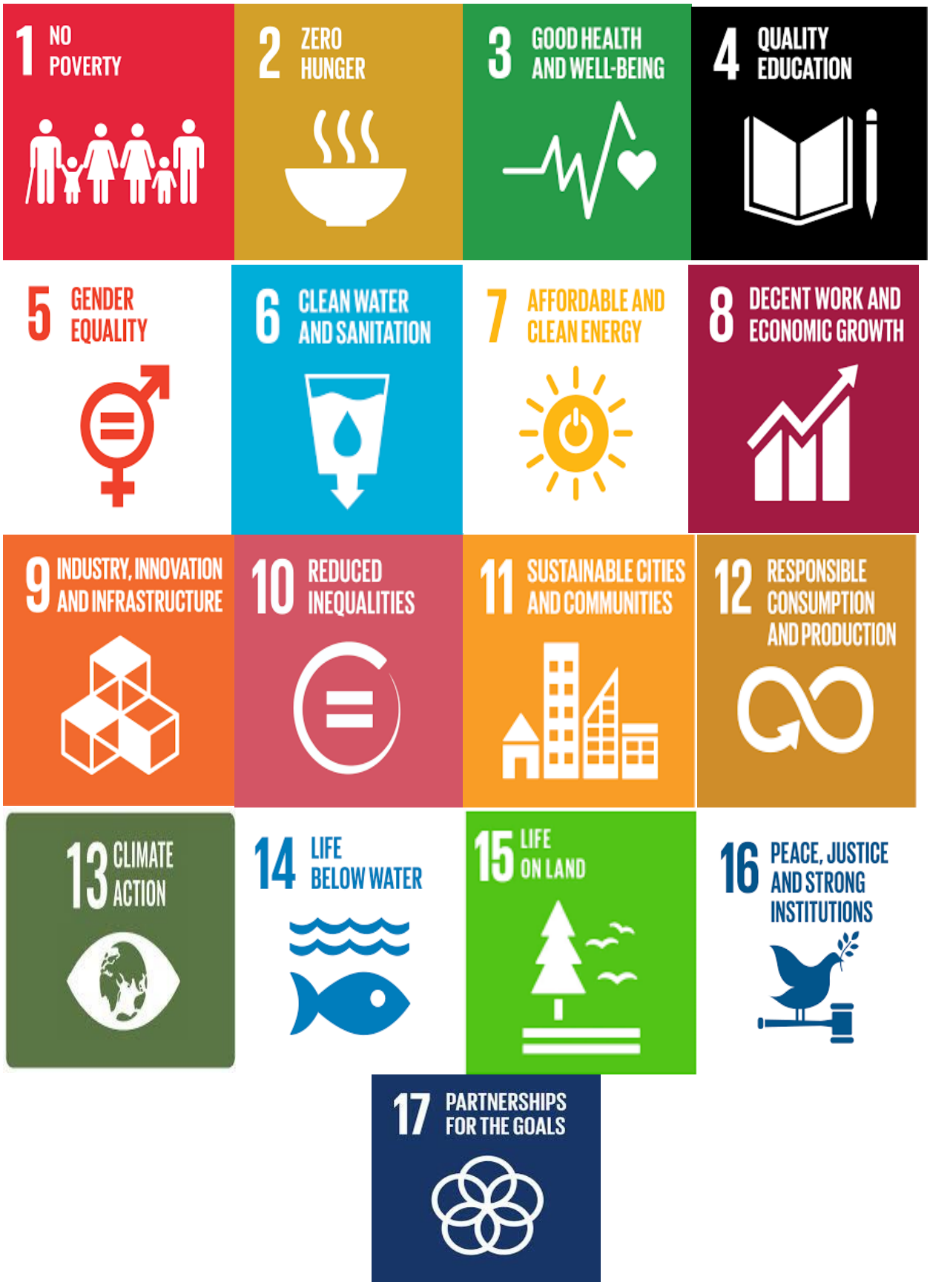
Life below Water – Conserve and sustainably use the oceans, seas and marine resources for sustainable development

Life on Land – Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss

Peace, Justice and Strong Institutions – Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels

Partnerships for the Goals – Strengthen the means of implementation and revitalize the global partnership for sustainable development

Source: http://www.un.org/sustainabledevelopment/sustainable- development-goals


1 NO POVERTY
2 ZERO HUNGER
3 GOOD HEALTH AND WELL-BEING
4 QUALITY EDUCATION
5 GENDER EQUALITY
6 CLEAN WATER AND SANITATION
7 AFFORDABLE AND CLEAN ENERGY
8 DECENT WORK AND ECONOMIC GROWTH
9 INDUSTRY, INNOVATION AND INFRASTRUCTURE
10 REDUCED INEQUALITIES
11 SUSTAINABLE CITIES AND COMMUNITIES
12 RESPONSIBLE CONSUMPTION AND PRODUCTION
13 CLIMATE ACTION
14 LIFE BELOW WATER
15 LIFE ON LAND
16 PEACE, JUSTICE AND STRONG INSTITUTIONS
17 PARTNERSHIPS FOR THE GOALS

TEACHING & LEARNING OBJECTIVES FOR SDG 7
JSS MEDICAL COLLEGE & HOSPITAL

SDG 7 - Affordable and Clean Energy

Ensure access to affordable, reliable, sustainable and clean energy for all

Teaching & Learning objectives for SDG 7 "Affordable and Clean Energy"

Subject/ topic/ course in regular curriculum relating to SDG -2	**Anatomy, Physiology, Biochemistry, Pathology, Microbiology, Paediatrics, General medicine, ENT, Radiotherapy, Respiratory medicine, OBG, Dermatology**
Cognitive Teaching & learning objectives	**At the end of final year, the learner should be able to** 1. Describe the health hazards of air pollution 2. Describe the health hazards of noise pollution 3. Describe the health hazards of radiation hazards 4. Describe the aetiology and basis of water borne diseases /jaundice/hepatitis/ diarrheal diseases 5. Describe toxic pollution of environment, its medico-legal 6. aspects & toxic hazards of occupation and industry 7. Describe the role of the environment in the cause and exacerbation of obstructive airway disease 8. Describe and discuss the aetiopathogenesis, clinical presentation, identification, functional changes, acute care, stabilization, management and rehabilitation of COPD in the elderly. 9. Describe and discuss the aetio-pathogenesis, clinical presentation, complications, assessment and management of nutritional disorders in the elderly. 10. Describe and discuss the response and the influence of host, immune status, risk factors and comorbidities on zoonotic diseases (e.g. Leptospirosis) 11. Discuss and describe the common causes, pathophysiology and manifestations of waterborne disease 12. Define and describe the pathogenesis and pathology of malaria with emphasis of role of environment on the life cycle of malarial parasite.

	13. Define and describe the pathogenesis and pathology of Common bacterial, viral, protozoal and helminthic diseases 14. Define and describe the etiology, types, exposure, Environmental influence, pathogenesis, stages, morphology, Microscopic appearance and complications of Occupational lung disease 15. Describe concepts of safe and wholesome water, sanitary sources of water, water purification processes, water quality standards, concepts of water conservation and rainwater harvesting 16. Enumerate, classify and describe the etiology, pathogenesis pathology and iodine dependency of thyroid swellings 17. Describe the role of environmental teratogens affecting pregnancy and its outcome (anomalies)
Socio-emotional Teaching & learningobjectives	**At the end of final year the learner should be able to** 1. Counsel the vulnerable individuals, families and communities on health problems related to non-availability of clean energy 2. Counsel the individuals regarding the advantages of renewable vs non-renewable source of energy. **3.** Can reflect on hazards of pollution of different natural resources like air, water etc. **4.** Can feel empathy, responsibility and solidarity for and with people suffering from pollution related diseases. 5. Advocate the importance of having clean sources of energy
Behavioral Teaching & learning objectives	**At the end of final year the learner should be able to** 1. Demonstrate the usage of various renewable energy sources at individual, family and community levels 2. Assess the availability of clean energy (natural resources) of individual, family and community and provide suitable advice based on the outcomes of assessment 3. Conduct health education sessions at community setting on causes, consequences and prevention of health hazards related to non-availability of clean energy (pollution). 4. Elicit document and present a medical history that will differentiate the aetiologies of various diseases caused due to air, water and noise pollution. 5. Conduct health education sessions for people at risk about the radiation hazards and its sequences (malignancies)

	6. Recognize the clinical signs of diseases that are exclusively caused due to contaminated sources of energy 7. Conduct health education sessions on the importance of sanitation and water supply 8. Assess patients with Vitamin D deficiency, Diagnose, Classify and plan management

Topics for SDG 7 "Affordable and Clean Energy"
1. Role of clean energy (natural resources) in maintaining health 2. Concept of portable water, green house effect and their importance at state, national and international levels 3. Causes, identification, and consequences of various waterborne diseases due to contamination of water 4. Causes, identification, and consequences of various diseases due to contamination of air 5. Causes, identification, and consequences of various diseases due to noise pollution 6. Causes, identification, and consequences of various diseases due to occupational hazards 7. Socio-cultural factors influencing the availability of clean energy sources 8. Political and financial factors affecting the affordability of clean energy 9. Assessment methods for clean energy sources at individuals, families, and community settings 10. Magnitude of pollution and its assessment with respect to vulnerable people visiting the health care establishments for diseases relating to environmental pollution 11. Community Nutrition programs, policies, legislations, and strategies 12. Methods of environmental education and counselling 13. Other effects environmental pollution on the ecosystem

Learning approaches and methods for SDG 7 "Affordableand Clean Energy"
1. Visiting sewage treatment and water recycling centres 2. Demonstration use of renewable sources instead on non-renewable at family and community level 3. Observation of *healthy environment week* at peripheral health centres by involving stakeholders at community setting. 4. Demonstration of use of biodegradable materials instead of substances which hazardous to environment. 5. Case studies, poster competition, essay writing on the causes, consequences and impact of environmental pollution 6. Case based discussions on water borne diseases, radiation hazards 7. Case based discussion on diseases resulting from air pollution and noise pollution 8. Clean energy assessment activities as a part of family health advisory surveys in Community Medicine

TEACHING & LEARNING OBJECTIVES FOR SDG 7
JSS DENTAL COLLEGE & HOSPITAL

Subject/ topic/ course in regular curriculum relating to SDG 7	● Radiation Protection ● Air and Water pollution and its impact on environment ● Application of renewable energy in dental care – Ecofriendly Dental Practice	● Oral Medicine and Radiology, Public Health Dentistry & Dental Mechatronics ● All undergraduate and post graduate students
Cognitive Teaching & learning objectives	● The learner knows about different energy resources – renewable and non-renewable – and their respective advantages and disadvantages including environmental impacts, health issues, usage, safety and energy security, and their share in the energy mix at the local, national and global level. ● The learner understands the concept of energy efficiency and sufficiency and knows socio-technical strategies and policies to achieve efficiency and sufficiency. ● The learner understands how policies can influence the development of energy production, supply, demand and usage. ● The learner knows about harmful impacts of unsustainable energy production, understands how renewable energy technologies can help to drive sustainable development and understands the need for new and innovative technologies and especially technology transfer in collaborations between countries.	
Socio-emotional Teaching & learning objectives	● The learner can communicate the need for energy efficiency and sufficiency. ● The learner can assess and understand the need for affordable, reliable, sustainable and clean energy of other people/other countries or regions. ● The learner can cooperate and collaborate with others to transfer and adapt energy technologies to different contexts and to share energy best practices of their communities. ● The learner can clarify personal norms and values related to energy production and usage as well as to reflect and evaluate their own energy usage in terms of efficiency and sufficiency. ● The learner can develop a vision of a reliable, sustainable energy production, supply and usage in their country.	
Behavioural Teaching & learning objectives	● The learner can apply and evaluate measures in order to increase energy efficiency and sufficiency in their personal sphere and to increase the share of renewable energy in their local energy mix. ● The learner can apply basic principles to determine the most appropriate renewable energy strategy in a given situation. ● The learner can influence public policies related to energy production, supply and usage. ● The learner can compare and assess different business models and their suitability for different energy solutions and to influence energy suppliers to produce safe, reliable and sustainable energy.	

Suggested topics for SDG 7 "Affordable and Clean Energy"

Different energy types, especially renewable energies like solar, wind, water, geothermal, tidalEnergy

production, supply, demand and usage of different countries

Energy efficiency and sufficiency in energy usage

Strategies: Centralized versus decentralized energy production; energy self-sufficiency, e.g. via local energy supply companies (LESCOs)

Political, economic and social dimensions of energy and linkages to power constellations, e.g. in mega energy projects like large scale solar farms or dam projects – potential conflict of interests (political and economic power (across borders), rights of especially indigenous people)

Environmental impacts and issues of energy production, supply and usage (e.g. climate change, grey energy)

The role of the public and private sectors in ensuring the development of low carbon energy solutions Peak of oil production and energy security – (over)dependence on non-renewable energies like oil Bridging technologies and technology for a 'cleaner' use of fossil fuels

Gender issues related to energy production, supply and usage

Examples of learning approaches and methods for SDG 7 "Affordableand Clean Energy"

Experiment with renewable energy technologies

Reflect on and discuss own energy usage, e.g. ranking reasons for energy usage on a (subjective) dimension of"for fulfilling basic needs" (e.g. energy for cooking) to "for a luxury lifestyle" (e.g. energy for a swimming pool)

Organize excursions to energy sites including ethical discussions with pros and cons of energy types and projects

Conduct scenario analyses for future energy production, supply and usage Conduct

an energy saving campaign in one's own institution or at the local level

Run a group project on how much energy is required to produce our daily needs, e.g. loaf of bread, cereal, etc.

Develop an enquiry-based project: "How are energy and human well-being linked?"

TEACHING & LEARNING OBJECTIVES FOR SDG 7
JSS COLLEGE OF PHARMACY, MYSORE

Subject/ topic/ course in regular curriculum relating to SDG 7	**Pharmaceutical Chemistry, Pharmacy Practice, Pharmacology, Pharmacognosy, Pharmaceutics.**
Cognitive Teaching & learning objectives	**At the end of course the learner should be able to,** 1. Understand the importance of affordable and clean energy 2. Conservation of energy. 3. Describe the concept of energy conservation. 4. Understand the effect of Affordable and Clean Energy towards healthy living. .
Socio-emotional Teaching & learning objectives	**1. At the end of final year, the student should be able to** 2. Practice and implement energy conservation. 3. Educate the individuals, families and communities on health problems related to non-availability of clean energy. 4. Spread awareness regarding the advantages of renewable vs non-renewable source of energy. 5. Advocate for affordable and clean energy.
Behavioural Teaching & learning objectives	**At the end of final year, the learner should be able to** 1. Adopt the usage of various affordable energy sources at individual, family and community levels. 2. Evaluate the accessibility of clean energy (renewable energy) of individual, family and community. 3. Conduct awareness sessions at community level on causes, effect on health related to non-availability of clean energy. 4. Conduct Energy Audit at institutional level to understand the energy consumption.

Suggested topics for SDG 7 "Affordable and Clean Energy"

1. Different energy types, especially renewable solar energy
2. Concept of greenhouse effect and their importance at state, national and international levels.
3. Bridging technologies and technology for a 'cleaner and judicious' use of fossil fuels.
4. Understand the effect of Affordable and Clean Energy towards healthy living.
5. Identify the health hazards related to Affordable and Clean Energy.
6. Socio-cultural factors influencing the availability of clean energy sources
7. Political and financial factors affecting the affordability of clean energy
8. Assessment methods for clean energy sources at individuals and Public.

Examples of learning approaches and methods for SDG 7 "Affordableand Clean Energy"

1. Advocate the use of renewable sources instead on non-renewable at individual, family and community level
2. Energy efficiency and sufficiency in its usage.
3. Visiting sewage treatment and water recycling centres.
4. Extempore and Essay writing on the causes, consequences and impact of environmental pollution
5. Run a group project on how much energy is required to produce our daily needs.

TEACHING & LEARNING OBJECTIVES FOR SDG 7
JSS COLLEGE OF PHARMACY, OOTY

Subject/ topic/ course in regular curriculum relating to SDG 7	• The professional programs/ Courses of Pharmacy are not technically associated with SDG No. 7

TEACHING & LEARNING OBJECTIVES FOR SDG 7
FACULTY OF HEALTH SYSTEM MANAGEMENT STUDIES

Subject/ topic/ course in regular curriculum relating to SDG 7	• Environmental studies/ The Multidisciplinary nature of environmental studies, Natural Resources, Renewable and non-renewable resources: • Natural resources and associated problems/ Semester1- BBAHHSM • Business economics / Macro Economics / Semester2 - BBAHHSM • Business law/ Company Formation / Semester3- BBAHHSM • Hospital planning and designing/ Hospital Planning –heating and ventilation/ Semester3- MBAHA • Hospital support services/Safe energy supply to all departments/ Semester3- MBAHA • Safety and risk management/Fire and radiation hazards/ Semester4- MBAHA
Cognitive Teaching & learning objectives	• The leaner knows about the importance of having proper planning and designing of hospital environment to provide affordable and clean energy • The learner understands the concept of corporate social responsibility to have clean energy to reduce carbon footprint • The learner understands the concept of Go Green and conservation of natural resources • The learner understands the role of individuals and societies in optimum use of energies, their supply and demand concepts • The learner will know the adverse environmental effects of mis-using the energy resources • The learner also knows on various national and international policies for the exchange of energy sources
Socio-emotional Teaching & learning objectives	• The learner can analyze the needs for affordable, reliable, and clean energy resources • The learner can understand the long-term effect of proper infrastructural planning for organizations in having affordable and clean energy • The learner can contribute towards sustainable energy by reducing the carbon footprint • The learner can help communities understand the importance of energy conservation by adopting healthy lifestyle practices
Behavioural Teaching & learning objectives	• The learner can initiate activities related to conservation of energy and raising awareness among the community • The learner can contribute towards reducing, reusing and recycling of the energy sources for the better future • The learner can be a responsible individual and demonstrate behavior that led to conservation of energy resources

TEACHING & LEARNING OBJECTIVES FOR SDG 7
JSS SCHOOL OF LIFE SCIENCES, OOTY

Cognitive Teaching & learning objectives	• The learner knows about different energy resources – renewable and non-renewable – and their respective advantages and disadvantages including environmental impacts, health issues, usage, safety and energy security, and their share in the energy mix at the local, national and global level. • The learner understands the concept of energy efficiency and sufficiency and knows socio-technical strategies and policies to achieve efficiency and sufficiency. • The learner understands how policies can influence the development of energy production, supply, demand and usage. • The learner knows about harmful impacts of unsustainable energy production, understands how renewable energy technologies can help to drive sustainable development and understands the need for new and innovative technologies and especially technology transfer in collaborations between countries.
Socio-emotional Teaching & learning objectives	• The learner can communicate the need for energy efficiency and sufficiency. • The learner can assess and understand the need for affordable, reliable, sustainable and clean energy of other people/other countries or regions. • The learner can cooperate and collaborate with others to transfer and adapt energy technologies to different contexts and to share energy best practices of their communities. • The learner can clarify personal norms and values related to energy production and usage as well as to reflect and evaluate their own energy usage in terms of efficiency and sufficiency. • The learner can develop a vision of a reliable, sustainable energy production, supply and usage in their country.
Behavioural Teaching & learning objectives	• The learner can apply and evaluate measures in order to increase energy efficiency and sufficiency in their personal sphere and to increase the share of renewable energy in their local energy mix. • The learner can apply basic principles to determine the most appropriate renewable energy strategy in a given situation. • The learner can influence public policies related to energy production, supply and usage. • The learner can compare and assess different business models and their suitability for different energy solutions and to influence energy suppliers to produce safe, reliable and sustainable energy.

Suggested topics for SDG 7 "Affordable and Clean Energy"

Different energy types, especially renewable energies like solar, wind, water, geothermal, tidal

Energy production, supply, demand and usage of different countries

Energy efficiency and sufficiency in energy usage

Strategies: Centralized versus decentralized energy production; energy self-sufficiency, e.g. via local energy supply companies (LESCOs)

Political, economic and social dimensions of energy and linkages to power constellations, e.g. in mega energy projects like large scale solar farms or dam projects – potential conflict of interests (political and economic power (across borders), rights of especially indigenous people)

Environmental impacts and issues of energy production, supply and usage (e.g. climate change, grey energy)

The role of the public and private sectors in ensuring the development of low carbon energy solutions

Peak of oil production and energy security – (over)dependence on non-renewable energies like oil

Bridging technologies and technology for a 'cleaner' use of fossil fuels

Gender issues related to energy production, supply and usage

Examples of learning approaches and methods for SDG 7 "Affordableand Clean Energy"

Experiment with renewable energy technologies

Reflect on and discuss own energy usage, e.g. ranking reasons for energy usage on a (subjective) dimension of "for fulfilling basic needs" (e.g. energy for cooking) to "for a luxury lifestyle" (e.g. energy for a swimming pool)

Organize excursions to energy sites including ethical discussions with pros and cons of energy types and projects

Conduct scenario analyses for future energy production, supply and usage

Conduct an energy saving campaign in one's own institution or at the local level

Run a group project on how much energy is required to produce our daily needs, e.g. loaf of bread, cereal, etc.

Develop an enquiry-based project: "How are energy and human well-being linked?"

DEPARTMENT OF YOGA

Subject/ topic/ course in regular curriculum relating to SDG 7	• Msc Yoga indirectly supports the SDG.
Cognitive Teaching & learning objectives	**At the end of 2nd year and course the learner should be able to,** • Understands the concept of using clean and natural energy resources efficiently with amalgamation of new technologies.
Socio-emotional Teaching & learning objectives	**At the end of 2nd year and course the learner should be able to,** • Help in creating awareness on safe and efficient usage of natural energy resources at household and community levels.
Behavioural Teaching & learning objectives	**At the end of 2nd year and course the learner should be able to,** • Educate and implement ideas on affordable and clean energy. • Implement strategies on encouraging sustainable food resources with reduced carbon footprint.

Examples of learning approaches and methods for SDG 7 "Affordableand Clean Energy"

- Creating awareness and demonstration of use of biodegradable materials, clean environment.
- Concept of portable water, green house effect and their importance at state, national and international levels.
- Conducting competitions, essay writing on the causes, consequences and impact of environmental pollution on health.
- Discussion & current strategies on water/air borne diseases, radiation hazards
- Clean energy assessment activities as a part of family health advisory surveys at various communities.

Suggested topics for SDG 7 "Affordable and Clean Energy"

- Assessment methods for clean energy sources at individuals, families, and community.
- Creating awareness on environmental issues, global warming.
- Education and counseling on environmental conservation programs, policies, legislations, and strategies at schools & communities.
- Reducing food carbon prints. Promoting sustainable, renewable sources of energy.

BSC Yoga

Subject/ topic/ course in regular curriculum relating to SDG 7	Environmental studies , Environmental psychology
Cognitive Teaching &learning objectives	**At the end of final Professional year, the learner should be able to,** • Understand about different energy resources as renewable and non-renewable; use of alternate energy resources. Clean energy resource concept and their importance • Understand the efficient and contemplative use of energy resources and energy conservation, methods and their importance • Know about different energy resources – renewable and non-renewable – and their respective advantages and disadvantages including environmental impacts, health issues, usage, safety and energy security, and their share in the energy mix at the local, national and global level. • Understand about efficient utilization of different energy sources and other alternative energy source utilization to conserve renewable energy sources. • Understand the concept of energy efficiency and sufficiency and knows socio-technical strategies and policies to achieve efficiency and sufficiency. • Know about harmful impacts of unsustainable energy production, understands how renewable energy technologies can help to drive sustainable development and understands the need for new and innovative technologies and especially technology transfer in collaborations between countries
Socio-emotional Teaching &learning objectives	**At the end of final year the learner should be able to** • Gain knowledge of energy conservation methods and their importance and be communicated to the society • Understands the clean energy resource concept and their importance can be disseminated to the society. • Understands the transformation in energy source production, constraints and their impact on human as well as environment. • The learner can cooperate and collaborate with others to transfer and adapt energy technologies to different contexts and to share energy best practices of their communities. • Communicate the need for energy efficiency and sufficiency. • The learner can assess and understand the need for affordable, reliable, sustainable and clean energy of other people/other countries or regions. • Clarify personal norms and values related to energy production and usage as well as to reflect and evaluate their own energy usage in terms of efficiency and sufficiency. • Develop a vision of a reliable, sustainable energy production, supply and usage in their country.

Behavioural Teaching &learning objectives	**At the end of final year the learner should be able to** • Apply and evaluate measures to enhance the effective and fruitful utilization of energy resources and sufficiency in their personal sphere and to increase the share of renewable energy in their local energy mix. • Apply basic principles to determine the most appropriate renewable energy strategy. • Influence public policies related to energy production, supply and usage.

Topics for SDG7 "Affordable and Clean Energy"

- Different energy types, especially renewable energies like solar, wind, water, geothermal
- Energy efficiency and sufficiency in energy usage
- Political, economic and social dimensions of energy.
- Environmental impacts and issues of energy production, supply and usage (e.g.climate change, green energy)
- The role of the public and private sectors in ensuring the development of low carbon energy solutions.
- Gender issues related to energy production, supply and usage

Learning approaches and methods for SDG7 "Affordable and Clean Energy"

- Experiment with renewable energy technologies
- Energy usage means and effective utilization of energy resources.
- Organize excursions to energy sites including ethical discussions with pros and cons of energy types and projects
- Conduct scenario analyses for future energy production by different means, supply and usage. own institution or at the local level.

DEPARTMENT OF MICROBIOLOGY

Subject/ topic/ course in regular curriculum relating to SDG 7	• Biofertilizers and Biopesticides (BSc IV Sem); Microbial Nanotechnology (BSc VIII Sem); Biofertilizers, Biomanure and Biopesticides (MSc II Sem); Bioremediation & Microbial Technology (BSc V Sem); Microbial Biotechnology (BSc VI Sem)
Cognitive Teaching & learning objectives	• The learners will understand the metabolism and metabolites produced from the microorganisms; Know the use of microorganisms as fertilizers in enrichment of soil fertility; Elucidates the knowledge on mass production of biofertilizers, biomanure, organic farming and biopesticides; know about the microbial synthesis of nanoparticles; Study the application of bionanomaterials
Socio-emotional Teaching & learning objectives	• The learners will be able to research on microbial fuel cells for producing high – voltage – output; Work on the production of third generation bio-fuels including bio-ethanol, bio-gases and bio-electricity with the help of microorganisms; research on nanotechnology in the field of bio-pesticides and biomanure preparation
Behaviorial Teaching & Learning objectives	• Major and minor projects regarding the production in large scale of bioethanol, biofertilizers, biomanure and biopesticides; Educating the farmers regarding the application of biomanures and biopesticides to the agricultural fields; Demonstration techniques used for synthesis of nanoparticles.

Learning approaches and methods for SDG 7

- Microbes for production of third-generation bio-fuels including bio-ethanol, bio- gases and bio-electricity
- Microbial Fuel Cells for producing higher-voltage-output
- Microbes for clean and green synthesis of nanoparticles

Suggested topics for students workshop

- Project work on bioethanol production
- Experiments on microbial mediated synthesis of nanoparticles
- Experiments on design of microbial fuel cell

DEPARTMENT OF ENVIRONMENTAL SCIENCES

Course Name in curriculum relating to SDG 7	• Natural Resources and Management (DSC 03) • Energy and Environment (DSC 06) • Bioenergy Technologies (DSC 07)
Cognitive Teaching & learning objectives	• The learner knows about different energy resources – renewable and non-renewable – and their respective advantages and disadvantages including environmental impacts, health issues, usage, safety and energy security, and their share in the energy mix at the local, national, and global level. • The learner understands the concept of energy efficiency and sufficiency and knows socio-technical strategies and policies to achieve efficiency and sufficiency. • The learner understands how policies can influence the development of energy production, supply, demand, and usage. • The learner knows about harmful impacts of unsustainable energy production, understands how renewable energy technologies can help to drive sustainable development and understands the need for new and innovative technologies and especially technology transfer in collaborations between countries. • The learners understand the development of renewable energy promoting policies, designing of renewable and alternative energy sources, management sources, etc.
Socio-emotional Teaching & learning objectives	• The learner can communicate the need for energy efficiency and sufficiency. • The learner can assess and understand the need for affordable, reliable, sustainable, and clean energy. • The learner can cooperate and collaborate with others to transfer and adapt energy technologies to different contexts and to share energy best practices of their communities. • The learner can clarify personal norms and values related to energy production and usage as well as to reflect and evaluate their own energy usage in terms of efficiency and sufficiency. • The learner can develop a vision of a reliable, sustainable energy production, supply, and usage in their country.
Behavioral Teaching & learning objectives	• The learner can apply and evaluate measures to increase energy efficiency and sufficiency in their

	personal sphere and to increase the share of renewable energy in their local energy mix. • The learner can apply basic principles to determine the most appropriate renewable energy strategy in each situation. • The learner can influence public policies related to energy production, supply, and usage. • The learner can compare and assess different business models and their suitability for different energy solutions and to influence energy suppliers to produce safe, reliable, and sustainable energy.
Suggested topics for SDG 7 "Affordable and Clean Energy"	
• Different energy types, especially renewable energies like solar, wind, water, geothermal, tidal Energy production, supply, demand, and usage of different countries • Energy efficiency and sufficiency in energy usage • Strategies: Centralized versus decentralized energy production; energy self-sufficiency, e.g. via local energy supply companies (LESCOs) • Political, economic and social dimensions of energy and linkages to power constellations, e.g. in mega energy projects like large scale solar farms or dam projects – potential conflict of interests (political and economic power (across borders), rights of especially indigenous people) • Environmental impacts and issues of energy production, supply and usage (e.g. climate change, grey energy) • The role of the public and private sectors in ensuring the development of low carbon energy solutions Peak of oil production and energy security – (over)dependence on non-renewable energies like oil Bridging technologies and technology for a 'cleaner' use of fossil fuels • Climate change related to energy production, supply, and usage	
Examples of learning approaches and methods for SDG 7 "Affordableand Clean Energy"	
• Experiment with renewable energy technologies • Reflect on and discuss own energy usage, e.g. ranking reasons for energy usage on a (subjective) dimension of "for fulfilling basic needs" (e.g. energy for cooking) to "for a luxury lifestyle" (e.g. energy for a swimming pool) • Organize excursions to energy sites including ethical discussions with pros and cons of energy types and projects • Conduct scenario analyses for future energy production, supply, and usage • Conduct an energy saving campaign in one's own institution or at the local level • Run a group project on how much energy is required to produce our daily needs, e.g. loaf of bread, cereal, etc.	

DEPARTMENT OF NUTRITION & DIETETICS

Subject/ topic/ course in regular curriculum relating to SDG 7	• Topics - Fundamentals of Food Science, Community Nutrition. • The course topics indirectly covers aspects on delivering more food with less and cleaner energy, food and agriculture systems.
Cognitive Teaching & learning objectives	**At the end of 2nd year and course the learner should be able to,** • Understands the concept of using clean and natural energy resources efficiently with amalgamation of new technologies. • Can improve critical thinking on impact of different energy resources (renewable and non-renewable) on nutrient quality of foods, health issues, environmental impacts, and their share in the energy mix at the local, national and global level. • Understands can understand the policies which can influence the usage of sustainable energy resources from farm to fork, strategies for achieving food security. • Can understand the need for sustainable food production using new and innovative technologies, technology transfer and collaboration at local and global levels.
Socio-emotional Teaching & learning objectives	**At the end of 2nd year and course the learner should be able to,** • Help in creating awareness on safe and efficient usage of natural energy resources at household and community levels. • Cooperate and collaborate with others to transfer and adapt energy technologies to different contexts and to share energy best practices of their communities. • Develop a vision, and educate all on the possible long term strategies for a reliable, sustainable energy production, helping achieving the food security.
Behavioural Teaching & learning objectives	**At the end of 2nd year and course the learner should be able to,** • Educate and implement ideas on affordable and clean energy, as it is very much needed for sustainable food supply and ensuring proper nutrient quality of foods. • Implement strategies on encouraging sustainable food resources with reduced carbon footprint.

Examples of learning approaches and methods for SDG 7 "Affordableand Clean Energy"

- Creating awareness and demonstration of use of biodegradable materials, clean environment,
- Conducting competitions, essay writing on the causes, consequences and impact of environmental pollution on food security, health.
- Discussion & current strategies on water/air borne diseases, radiation hazards
- Clean energy assessment activities as a part of family health advisory surveys at various communities.
- Projects on sustainable & renewable energy usage.

Suggested topics for SDG 7 "Affordable and Clean Energy"

- Assessment methods for clean energy sources at individuals, families, and community settings
- Magnitude of environment pollution and its effects on agro food production food & nutrient quality, direct and indirect effects on health
- Identification and providing solutions of vulnerable people visiting the health care establishments for diseases relating to environmental pollution.
- Creating awareness on environmental issues, global warming,
- Education and counseling on environmental conservation programs, policies, legislations, and strategies at schools & communities.
- Reducing food carbon prints. Promoting sustainable, renewable sources of energy.

MSc Sports Nutrition & Management

Subject/ topic/ course in regular curriculum relating to SDG 7	• Msc Sports Nutrition and Management
Cognitive Teaching & learning objectives	At the end of 1st professional year, the student should be able to • know about different energy resources – renewable and non-renewable – available and their efficient usage. • understand the concept of energy efficiency and sufficiency. • The learner understands how as a individual can influence the usage of available resources to avoid over usage. • The learner knows about harmful impacts of unsustainable energy utilization on the future.

Socio-emotional Teaching & learning objectives	At the end of the program, the student should be able to • communicate the need for energy efficiency and sufficiency. • assess and understand the need for affordable, reliable, sustainable and clean energy of other people. • cooperate and collaborate with others to use sustainable and efficient energy utilization
Behavioural Teaching & learning objectives	At the end of the program, the student should be able to • apply and evaluate measures in order to increase energy efficiency and sufficiency in their personal sphere. • apply basic principles to determine the most appropriate renewable energy strategy in a given situation.

Suggested topics for SDG 7 "Affordable and Clean Energy"

- Assessment methods for clean energy sources at individuals, families, and community settings
- Magnitude of environment pollution and its effects on agro food production food & nutrient quality, direct and indirect effects on health
- Identification and providing solutions of vulnerable people visiting the health care establishments for diseases relating to environmental pollution.
- Creating awareness on environmental issues, global warming,
- Education and counseling on environmental conservation programs, policies, legislations, and strategies at schools & communities.

Examples of learning approaches and methods for SDG 7 "Affordableand Clean Energy"

Conduct scenario analyses for future energy production, supply and

usage Conduct an energy saving campaign in one's own institution

or at the local level

Run a group project on how much energy is required to produce our daily needs, e.g. loaf of bread, cereal, etc.

Develop an enquiry-based project: "How are energy and human well-being linked?"

Subject/ topic/ course in regular curriculum relating to SDG 7	Environmental studies, Public health and Community Nutrition
Cognitive Teaching &learning objectives	**At the end of 1 & 2nd Professional year, the learner should be able to,** • Understand about different energy resources as renewable and non-renewable; use of alternate energy resources. Clean energy resource concept and their importance • Understand the efficient and contemplative use of energy resources and energy conservation, methods and their importance • Know about different energy resources – renewable and non-renewable – and their respective advantages and disadvantages including environmental impacts, health issues, usage, safety and energy security, and their share in the energy mix at the local, national and global level. • Understand about efficient utilization of different energy sources and other alternative energy source utilization to conserve renewable energy sources. • Understand the concept of energy efficiency and sufficiency and knows socio-technical strategies and policies to achieve efficiency and sufficiency. • Know about harmful impacts of unsustainable energy production, understands how renewable energy technologies can help to drive sustainable development and understands the need for new and innovative technologies and especially technology transfer in collaborations between countries
Socio-emotional Teaching &learning objectives	**At the end of final year the learner should be able to** • Gain knowledge of energy conservation methods and their importance and be communicated to the society • Understands the clean energy resource concept and their importance can be disseminated to the society. • Understands the transformation in energy source production, constraints and their impact on human as well as environment. • The learner can cooperate and collaborate with others to transfer and adapt energy technologies to different contexts and to share energy best practices of their communities. • Communicate the need for energy efficiency and sufficiency. • The learner can assess and understand the need for affordable, reliable, sustainable and clean energy of other people/other countries or regions. • Clarify personal norms and values related to energy production and usage as well as to reflect and evaluate their own energy usage in terms of efficiency and sufficiency. • Develop a vision of a reliable, sustainable energy production, supply and usage in their country.
Behavioural Teaching &learning objectives	**At the end of final year the learner should be able to** • Apply and evaluate measures to enhance the effective and fruitful utilization of energy resources and sufficiency in their personal sphere and to increase the share of renewable energy in their local energy mix. • Apply basic principles to determine the most appropriate renewable energy strategy. • Influence public policies related to energy production, supply and usage.

Topics for SDG7 “Affordable and Clean Energy”

1. Different energy types, especially renewable energies like solar, wind, water, geothermal
2. Energy efficiency and sufficiency in energy usage
3. Political, economic and social dimensions of energy and linkage stop owe constellations, e.g. in mega energy projects like large scale solar farms or dam projects – potential conflict of interests (political and economic power (across borders), rights of especially indigenous people)
4. Environmental impacts and issues of energyproduction, supply and usage (e.g.climatechange, greyenergy)
5. The role of the public and privatesectors in ensuring the development of low carbon energy solutions.
6. Gender issues related to energy production, supply and usage

Learning approaches and methods for SDG7 “Affordable and Clean Energy”

1. Experiment with renewable energy technologies
2. Energy usage means and effective utilization of energy resources.
3. Organize excursions to energy sites including ethical discussions with pros and cons of energy types and projects
4. Conduct scenario analyses for future energy production by different means, supply and usage. own institution or at the local level

NANOSCIENCE & TECHNOLOGY

Nanotechnology utilizes the unique properties of materials at the nanoscale (<100 nm). At this scale, the surface properties dominate the bulk properties of the material. The electrical properties, durability, strength, and activity of the materials are enhanced and engineered to obtain desired features through nanotechnology. Unusual properties and increased surface areas of nanomaterials provide great potential to improve renewable energy applications. Nanotechnology researches mainly focus on solar, hydrogen and biomass energy. The developments in the geothermal, wind and tidal energy applications mainly focus on the construction materials or the used machinery rather than the actual process.

Despite decades of development, solar cells are still relatively expensive. This not only makes solar an unattractive and uncompetitive alternative to fossil fuels, but it ensures that the technology is not deployed where it is most needed. The most efficient cells tend to be made up of layers of expensive crystalline silicon. These have chemicals added to encourage particles of light, called photons, to liberate electrons, which pass from one layer to the other to create a current. While this works, it could be done using cheaper materials and in ways that are more efficient. The amount of energy converted from light into electricity ultimately depends upon how many electrons can pass across the interface between the two layers and this is limited by the size of that interface. One-way nanotechnology can help is by increasing the size of the electron interface layers by making bumpy surfaces which will allow more electrons to pass in turn increasing the amount of electricity produced.

With nanotechnology, energy efficiency can be greatly improved at various steps and types of energy processes. Nanostructured catalysts for example help increase the efficiency of fuel cells while porous nanomaterials are used for hydrogen storage. Nanofluids enhance the heat transfer efficiency of solar collectors while quantum dots and carbon nanotubes increase the energy absorption properties of solar cells. Nanotechnology enables the development of portable energy systems as well as large-scale systems with high-efficiency.

The development of cost-effective renewable energy systems will contribute to the urgent energy global goals while helping reduce the destructive effect of human activities. Even in the area of non-renewable energy generation, nanotechnology is equally very useful. By making the production of fuel from low grade raw material economical, the technology can address the shortage of fossil fuels, such as diesel and gasoline. It can also be used to make the production of fuels from normal raw materials more efficient. And by reducing friction using lubricants fortified with nanoparticles, energy consumption from conventional engines can be significantly reduced leading to increased service life of engines. Hence, nanotechnology is and will play a major role in the production of clean and affordable energy all over the globe.

Cognitive Teaching & learning objectives	• The learner knows about different energy resources – renewable and non- renewable • The learner knows the effect of particle size between bulk and nanoscale on how they contribute towards efficiency of energy productions • The learner under stands the different applications of nanotechnology in energy production and harvesting • The learner knows about harmful impacts of unsustainable energy production, understands how renewable energy technologies can help to drive sustainable development and understands the need for new and innovative technologies and especially technology transfer in collaborations between countries.

Suggested topics for SDG - "Affordable and Clean Energy"

Following are the projects that are being carried out by our students:

- Nanosolar cells for sustainable energy.
- Energy from waste substrates
- Nanotechnology applications for sustainable energy

DEPARTMENT OF MEDICAL PHYSICS

Subject/ topic/ course in regular curriculum relating to SDG 7	• External beam radiation therapy and brachytherapy
Cognitive Teaching & learning objectives	• Describe the health hazards of radiation hazards.
Socio-emotional Teaching & learning objectives	• Advocate the importance of having clean sources of energy.
Behavioural Teaching & learning objectives	• Conduct health education sessions for people at risk about the radiation hazards and its sequences (Ionizing radiation is highly carcinogenic) • Recognize the clinical signs of diseases that are exclusively caused due to contaminated sources of energy.

Suggested topics for SDG 7 "Affordable and Clean Energy"

- X rays and Gamma rays in both diagnostic and therapeutic of cancer treatment.
- To select the appropriate treatment machines for the appropriate cancer, teletherapy brachytherapy can be choosen.
- Clinical electron beams- Energy specification , Electron energy selection for patient treatment.

Examples of learning approaches and methods for SDG 7 "Affordableand Clean Energy"

- Organize excursions to energy sites including ethical discussions with pros and cons of energy types and projects
- Conduct awareness for the diagnostic and therapeutic purpose of radiation

DEPARTMENT OF MEDICAL STATISTICS

Subject/ topic/ course in regular curriculum relating to SDG 7	• Multivariate Analysis
Cognitive Teaching & learning objectives	• The learner identifies and apply the multivariate statistical techniques in health research. • The learner knows the impact of independent variables which represents that Renewable energy consumption per capita; Energy usage per capita; renewable energy consumption; and fossil fuel energy consumption plays significant role in influencing Green Energy through multivariate regression analysis. • The learner understands the concept of Analysis of multivariate assessment methods for effective location of renewable energy facilities • The learner understands Multivariate Analysis used to access the Solar City Economics.
Socio-emotional Teaching & learning objectives	• The learner can access the principal component analysis, clustering, applications in test on mean vectors and MANOVA • The learner can assess multivariate techniques appropriately, undertake multivariate hypothesis tests, and draw appropriate conclusions. • The learner can know the assumptions underlying their use and appreciate the strengths and limitations of these methods.
Behavioural Teaching & learning objectives	• The learner can apply the principles and characteristics of the multivariate data analysis techniques • The learner can apply basic principles to determine the most appropriate renewable energy strategy in each situation. • The learner can influence public policies related to energy production, supply, and usage. • The learner can compare and assess the knowledge of multivariate methods is particularly helpful for gaining employment in statistical consulting.

Suggested topics for SDG 7 "Affordable and Clean Energy"

- ✓ Multivariate Data in Biological Sciences.
- ✓ Applications of MANOVA to understand the renewable energy
- ✓ Structural Equation Modelling and Path Analysis.
- ✓ Applications, Canonical Correlations and Canonical Variable for public health
- ✓ Application of PCA of energy consumption and socio-economic factors

Examples of learning approaches and methods for SDG 7 "Affordableand Clean Energy"

- ✓ Seminars on the applications of multivariate analysis.
- ✓ To study the factors that could impact renewable energy consumption based on the national level as state levels. The results of the Forecast Error Variance Decomposition (FEVD)
- ✓ The integrated approach of Exploratory Factor Analysis (EFA) to explain renewable energy consumption in each state-Case study.

DEPARTMENT OF GEOINFORMATICS

Subject/ topic/ course in regular curriculum relating to SDG 1	• Site suitability for wind and solar energy plant using Geospatial Technology. • Spatial-Temporal analysis of the temperature.
Cognitive Teaching & learning objectives	At the end of 2nd year the learner should be able to • know the concept of affordable and Clean Energy. • Learn application of GIS in finding suitable areas of sustainable and clean energy.s • to analyze areas that have the potential to generate ocean current energy • Analyse of the Suitability Level of Solar Panel and windmill Locations using Remote Sensing Satellite Data. • Evaluate the overall spatiotemporal solar panel and windmill installation potential in the region. • Use the GIS technology that better identifies sites of maximum energy potential and optimized economic development while minimizingenvironmental impact.
Socio-emotional Teaching & learning objectives	At the end of final year the student should be able to • Communicate the need for energy efficiency and sufficiency. • Assess and understand the need for affordable, reliable, sustainable and clean energy for other people/other countries or regions. • Develop a vision of reliable, sustainable energy production, supply and usage in the region using GIS.
Behavioural Teaching & learning objectives	At the end of the program the learner should be able to • Apply GIS technology in order to increase energy efficiency and sufficiency and to increase the share of renewable energy in their local energy mix. • Apply basic principles to determine the most appropriate renewable energy strategy in a given situation. • Influence public policies related to energy production, supply • and usage using a spatial decision support system.

Suggested topics for SDG 7 "Affordable and Clean Energy."
• Affordable and Clean Energy through Geospatial Data • Use of GIS in finding suitable sites for new renewable energy sources. • Analysis of the Suitability Level of Solar Panel Locations using Remote Sensing Satellite Data. • evaluate the overall spatiotemporal solar panel installation potential in the region • GIS for innovative clean energy strategies.
Examples of learning approaches and methods for SDG 7 "Affordable and Clean Energy."
• Case studies of research papers to understand the principles of energy and use of GIS. • Organize excursions to energy sites, including ethical discussions on the pros and cons of energy types and projects. • Conduct scenario analyses for future energy production, supply and usage. • Conduct an energy-saving campaign in one's own institution or at the local level.

Sustainable Development Goals

'Touching the lives of Millions'

Focusing on a purpose as expansive and yet as specific as improving quality of life through Human Development, the JSS Mahavidyapeetha has grown from strength to strength. A long and healthy life, Education for all and a decent standard of living, the indicators of Human development, have been the underlying philosophy of Jagadguru Sri Veerasimhasana Mahasamsthana Math, Suttur Srikshethra, for centuries. This is also the philosophy for which the Mahaidyapeetha today stands for.

Under the untiring efforts of Jagadguru Dr. Sri Shivarathri Rajendra Mahaswamiji, the Mahavidyapeetha has witnessed enormous growth in the field of education and today has over 300 institutions under its fold, from kindergartens to postgraduate centres and postdoctoral research catering to the educational needs of more than 1,00,000 students.

The Mahavidyapeetha continues to play an important role in expanding the scope of its activities to several branches of knowledge, welfare, and culture. Its educational efforts span crèches for toddlers of working rural women, schools to impart primary and secondary education in both Kannada and English medium, Colleges, Polytechnics, Technical, Medicine, etc. For realizing its mission, it has equipped itself with an extensive infrastructure and an army of dedicated and highly qualified human resource. These institutions, located in strategic areas, serve a broad spectrum of society, from virtually remote tribal villages to metropolitan cities such as Bengaluru, Noida, New Delhi, Ooty, and Coimbatore, besides their presence in United States, Mauritius, and Dubai.

Apart from formal education, the initiatives stretch to integrated rural development through training and empowering of rural folk, reaching out healthcare to people through modern and traditional Indian systems of medicine, patronizing literary activities, visual arts, performing arts, restoration of temples and historical monuments.

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