

17.4 Education for the SDGs

17.4.1 Education for SDGs commitment to meaningful education

Have a commitment to meaningful education around the SDGs across the university

SSU provides education around SDG through core and specialized papers. Many Courses are part of curriculum for

1. Master of Business Administration
2. Bachelor of Business Administration
3. Bachelor of Commerce (Hons.),
4. Bachelor of Science
5. Bachelor of Agriculture
6. Bachelor of Interior Design
7. Master of Computer Application
8. Bachelor in Yoga Sciences

Core Papers (relevant and applicable to all students):

1. Corporate Environment Responsibility and Sustainability
2. Environmental Science as a compulsory paper in all humanities programs
3. Environmental Studies and Disaster Management
4. Renewable Energy and Green Technology

Specialized papers for Specialization programs:

1. Ancient Wisdom in Achieving Sustainable Development Goal
2. Sustainable Marketing
3. Entrepreneurship in Green Business

Subject Code	Subject Name	T	P
MBC 110	CORPORATE ENVIRONMENTAL RESPONSIBILITY (CER) & SUSTAINABILITY	2	2

Learning Objectives:

- Understand the basic fundamentals of sustainable development from business management perspective.
- Learn the concept of sustainable consumption and production by integrating sustainability factors within core sustainability strategy.
- Acquaint students with the corporate sustainability strategies.
- Teach students the major aspects of international standards, protocols, opportunities and challenges of sustainability in business and educational institutions.

Course Outcomes:

- Enhance the critical thinking about scarcity and resource optimization.
- Develop insights on sustainable business analysis and strategy formulation.
- Enrich the understanding towards environmental competitiveness and social responsibility.
- Design and develop the strategies to combat climate change and support in necessary transition towards sustainable economy.

Module I: Fundamentals of Sustainable development

Definition, History, Brundtland commission, business triple bottom line, sustainable development goals(SDGs), environmental responsibility, corporate social responsibility.

Activity: Analysis of SDGs of country with global indicators.

Case Study: Volkswagen CSR (2015), The Benefit Corporation and Corporate Social Responsibility(2013).

Module II: Sustainable Consumption & Production

Green consumerism, eco-labeling, green-washing , green consumer theories-GFT, VBN, TPB, Environmental competitiveness: green innovation (product innovation, process innovation, organisational innovation, marketing innovation), life cycle assessment, environmental management system, ISO:14001, circular economy (reduce, reuse , remanufacture and recycling), greening of waste, challenges of sustainable production.

Activity: Life cycle assessment of business, 3R application in industry.

Case Study: Comprehensive greenspace planning based on landscape ecology principles in compact Nanjing city, China (2003).

Module III: Corporate sustainability strategy

Sustainability footprints, developing strategy through benchmarking and balanced scorecards, Intrapreneurs and stakeholder engagement, Implementation of sustainable management strategy, green supply chain, reverse logistics.

Activity: Carbon footprint calculation and development of strategy.

Case Study: Beyond Green: Strategies for sustainable world (1996).

Module IV: Corporate regulatory compliance and governance

Corporate governance through the eyes of various international standards including AS 8000, AS 8002, GRI, Sustainability metrics, materiality and assurance, transparency and accountability, Sustainability in higher education, Sustainability challenges and solutions.

Activity: Sustainability reporting.

Case Study: Do Conflicts Affect a Company's Corporate Social Responsibility Policy? (2015).

Suggested Readings:

1. Baker, S. (Ed.), (2012). Politics of sustainable development. Routledge.

2. Redclift, M. (2002). Sustainable development: Exploring the contradictions. Routledge.
3. Docherty, P., Kira, M., & Shani, A. R. (Eds.), (2008). Creating sustainable work systems: Developing social sustainability. Routledge.

Subject Code	Subject Name	T	P
GME 106G	Ancient Wisdom In Achieving Sustainable Development Goal	2	2

Course Objectives:

- To understand sustainable development from Eastern and Western Perspectives.
- To gain knowledge of the journey of development goals from MDGs to SDGs.
- To understand how governance can impact SDGs
- To develop an appreciation of the challenges and opportunities that India has in meeting the SDGs.

Learning Outcomes:

- To learn the basic skills of general environmental audit in public policy and business enterprises.
- To learn the skills in connecting the global and local risks in climate change and sustainability.
- To learn the skills in multi-stakeholder impact analysis in any project or investment.
- To develop the skills in localizing the SDGs through Green Campus Programme and GreenBuilding.

Module I: INTRODUCTION AND BACKGROUND

History and Evolution of Sustainability in Indian and Western Traditions Anthropocentrism and Eco-Centrism, Development, Industry and Environment-

Development and Sustainability: The UN Perspectives, Journey of Development Goals- From MDGs to SDGs

Discussion: Place of Environment in Eastern and Western Perspectives, Pancha Mahabhuta Theory, Naturopathy, Ayurveda and Yoga, Indigenous Communities on Nature & Sustainability

Module II: SUSTAINABILITY IN POLICY AND BUSINESS

Sustainability in Public Policy and Business; Climate Change Resilience in Policy and Business; Corporate Sustainability Risk Management; Cases of Sustainable Policy and Business Practices

***Discussion:** Debating Climate Change and its impact on Society and Business, Implications of the Paris Agreement, <https://unfccc.int/resource/docs/2015/cop21/eng/l09r01.pdf>, Science Based Target on Business, <https://sciencebasedtargets.org/>, -“Fashion Industry Charter for Climate Action”, <https://unfccc.int/climate-action/sectoral-engagement/global-climate-action-in-fashion/about-the-fashion-industry-charter-for-climate-action>*

Module III: GOVERNANCE, INDICATORS AND INDIA

Governing Sustainability: Actors, Networks and
Laws Measuring Sustainability: Global and
National Indicators

Corporate Social Responsibility and Sustainability: Emerging Trends and
Best Practices India and SDGs: Food Security, Sustainable Consumption,
Energy Security, Green Building

***Skills Training:** Environmental Compliance, EIA, Water, Waste management, Renewable Energy, Energy & Transport Audit of Campus, CSR & SDGs*

Module IV: SUSTAINABILITY IN PRACTICE

Localizing SDGs: (Cases of Green Campus by Climate Reality Project and Green Building of IGBC) Developing a Sustainable Business Strategy; Entrepreneurship in Sustainable Business; Sustainability Quotient and Sustainability Education; Future of Sustainability Professionals and Industry 4.0

***Skills Training:** Greenhouse Gas (GHG) Accounting, Sustainability Reporting and Developing Personal and Organizational Sustainability Plans. This would include a brief on “The GHG Protocol Corporate Accounting and Reporting Standard”, <https://ghgprotocol.org/corporate-standard>. Carbon Disclosure Project (CDP), <https://www.cdp.net/en>*

Suggested Readings:

1. United Nations, Sustainable Development Goals Knowledge Platform, <https://sustainabledevelopment.un.org/>
2. United Nations in India, <https://in.one.un.org/page/sustainable-development-goals/> RIS and the UN (2016) India and Sustainable Development Goals: The Way Forward, RIS, New Delhi, <http://ris.org.in/sdg/india-and-sustainable-development-goals-way-forward>

Subject Code	Subject Name	T	P
GME 103M	SUSTAINABLE MARKETING	2	2

Course Objectives:

- To understand the drivers, risks, challenges and opportunities associated with addressing sustainability management challenges.
- To acquaint the guiding principles, values and holistic mindset that guides an effective sustainability vision and strategy.

Course Outcomes:

After completing the paper the student will be able to:

- Identify theories and models within the areas of sustainable marketing strategy, sustainable market communication and sustainable supply chain management, and produce a written report.
- Analyse the segmentation, targeting and positioning from go-green perspective.
- Demonstrate sustainable marketing strategies to attract more consumers towards sustainable products/services.
- Create SWOT for business and explore opportunities to become more sustainable.

Module I: Introduction to Sustainable marketing:

Business cannot be as usual, Conventional marketing revisited, Moves in the right direction, Environmental marketing variants, foundations of sustainable marketing, Defining the parameters of sustainable marketing, Ethical dimensions of sustainable marketing, green marketing environment and process, difference between green and sustainable marketing.

Practical: Advertisement analysis of companies for ethical, green and sustainability perspective. Case Study: Ethical dimensions of sustainable marketing: A consumer policy perspective (2007).

Module II: Sustainable product and services:

Go-to market strategy-segmentation, targeting and positioning, product profiling-unique value proposition, impacts over life cycle, product development and innovation, frugal innovation, sustainable public procurement, eco-magination, changing consumer behaviours.

Practical: Environmental positioning analysis of product and services.

Case Study: Environmental management and strategic positioning of Spanish

manufacturing industries.

Module III: Sustainable marketing strategies:

System thinking for sustainable product and services, value chain analysis, beyond corporate social responsibility, stakeholder engagement, integrated sustainability management system, product life cycle management, sustainable marketing management-eco label, green washing and sustainability reporting, socially responsible investment, extended producer responsibility, B2B sustainable marketing, integrated marketing communication, Green pricing strategy.

Practical: Eco-labeling and green washing analysis of product and services.

Case Study: Extended producer responsibility for e-waste: Individual or collective producer responsibility?

Module IV: Challenges and opportunities of sustainable transformation:

Meeting triple bottom line, incremental innovation, cost of greening, tougher environmental regulations, sustainable packaging and branding, Sustainable brand imperative.

Practical: Cost of greening activity.

Case Study: Sustainable brand-based innovation: The role of corporate brands in driving sustainable innovation.

Suggested Reading:

- Baker, S. (Ed.). (2012). Politics of sustainable development. Routledge.
- Peattie, K., & Charter, M. (2003). Green marketing. *The marketing book*, 5, 726-755.
- Fuller, D. A. (1999). *Sustainable marketing: Managerial-ecological issues*. Sage Publication

Subject Code	Subject Name	T	P
BCC104	ENVIRONMENTAL SCIENCE	2	2

Course Objectives:

- To enhance knowledge skills and attitude to environment
- To provide exposure to the field to provide student first-hand knowledge on various local environmental aspects

Learning Outcomes:

- Acquire knowledge and change attitude to environment.
- Understand various local environmental aspects and perspectives.

Module I: Multidisciplinary Nature of Environmental Science

Definition, scope and importance; Natural Resources: Renewable and non-renewable resources: Natural resources and associated problems: a) Forest resources: Use and over-exploitation, deforestation, case studies. Timber extraction, mining, dams and their effects on forest and tribal people. b) Water resources: Use and over-utilization of surface and ground water, floods, drought, conflicts over water, dams-benefits and problems. c) Mineral

resources: Use and exploitation, environmental effects of extracting and using mineral resources, case studies. d) Food resources: World food problems, changes caused by agriculture and overgrazing, effects of modern agriculture, fertilizer-pesticide problems, water logging, salinity, case studies. e) Energy resources: Growing energy needs, renewable and non-renewable energy sources, use of alternate energy sources. Case studies. f) Land resources: Land as a resource, land degradation, man induced landslides, soil erosion and desertification: Role of an individual in conservation of natural resources and Equitable use of resources for sustainable lifestyles.

Module II: Ecosystems, Biodiversity and its Conservation

- a) Concept of an ecosystem: Structure and function of an ecosystem, Producers, consumers and decomposers, Energy flow in the ecosystem, Ecological succession, Food chains, food webs and ecological pyramids, Introduction, types, characteristic features, structure and function of Forest ecosystem, Grassland ecosystem, Desert ecosystem, Aquatic ecosystems (ponds, streams, lakes, rivers, oceans, estuaries);
- b) Biodiversity and its conservation: Introduction – Definition: genetic, species and ecosystem diversity, Biogeographical classification of India, Value of biodiversity: consumptive use, productive use, social, ethical, aesthetic and option values, Biodiversity at global, National and local levels, India as a mega-diversity nation, ot-sports of biodiversity, Threats to biodiversity: habitat loss, poaching of wildlife, man-wildlife conflicts, Endangered and endemic species of India, Conservation of biodiversity: In-situ and Ex-situ conservation of biodiversity.

Module III: Environmental Pollution

- a) Definition, Cause, effects and control measures of: Air pollution, Water pollution, Soil pollution, Marine pollution, Noise pollution, Thermal pollution, Nuclear hazards, Solid waste Management: Causes, effects and control measures of urban and industrial wastes. Role of an individual in prevention of pollution, Pollution case studies, Disaster management: floods, earthquake, cyclone and landslides.
- b) Social Issues and the Environment, From Unsustainable to Sustainable development, Urban problems related to energy, Water conservation, rain water harvesting, watershed management, Resettlement and rehabilitation of people; its problems and concerns. Case Studies, Environmental ethics: Issues and possible solutions. Climate change, global warming, acid rain, ozone layer depletion, nuclear accidents and holocaust, Case Studies; Wasteland reclamation, Consumerism and waste products, Environment Protection Act., Air (Prevention and Control of Pollution) Act., Water (Prevention and control of Pollution) Act, Wildlife Protection Act, Forest Conservation Act, Issues involved in enforcement of environmental legislation, Public awareness.

Module IV: Human Population and the Environment

- a) Population growth, variation among nations, Population explosion – Family Welfare Programme, Environment and human health, Human Rights, Value Education, HIV/AIDS, Women and Child Welfare, Role of Information Technology in Environment and human health, Case Studies;

b) Field work: Visit to a local area to document environmental assets river/forest/ grassland/hill/mountain, Visit to a local polluted site-Urban/Rural/Industrial/ Agricultural, Study of common plants, insects, birds, Study of simple ecosystems-pond, river, hill slopes, etc.

Suggested Readings:

1. Ezech Bharucha Environmental Studies for UG courses for University Grant Commission
2. Agarwal, K.C. 2001 Environmental Biology, Nidi Publ. Ltd. Bikaner.
3. Bharucha Erach, The Biodiversity of India, Mapin Publishing Pvt. Ltd., Ahmedabad – 380 013, India, Email:mapin@icenet.net (R)
4. Brunner R.C., 1989, Hazardous Waste Incineration, McGraw Hill Inc. 480p
5. Clark R.S., Marine Pollution, Clanderson Press Oxford (TB)
6. Cunningham, W.P. Cooper, T.H. Gorhani, E & Hepworth, M.T. 2001, Environmental Encyclopedia, Jaico Publ. House, Mumbai, 1196p

Subject Code	Subject Name	T	P
ENS 104	Environmental Studies and Disaster Management	2	1

Objective: To get an insight into various environmental components including ecosystem, ecological succession and disaster management.

Course outcome: Upon completion of the course students will be able to;

- List various types of energy sources (renewable and non-renewable).
- Describe various components of an ecosystem.
- Explain various types of pollution sources and their management.
- Gained knowledge on various kinds of disasters and their management.

Theory

Multidisciplinary nature of environmental studies Definition, scope and importance. Natural Resources: Renewable and non-renewable resources, Natural resources and associated problems. a) Forest resources: Use and over-exploitation, deforestation, case studies. Timber extraction, mining, dams and their effects on forest and tribal people. b) Water resources: Use and over-utilization of surface and ground water, floods, drought, conflicts over water, dams-benefits and problems. c) Mineral resources: Use and exploitation, environmental effects of

extracting and using mineral resources, case studies. d) Food resources: World food problems, changes caused by agriculture and overgrazing, effects of modern agriculture, fertilizer-pesticide problems, water logging, salinity, case studies. e) Energy resources: Growing energy needs, renewable and non-renewable energy sources, use of alternate energy sources. Case studies. f) Land resources: Land as a resource, land degradation, man induced landslides, soil erosion and desertification. • Role of an individual in conservation of natural resources. • Equitable use of resources for sustainable lifestyles.

Ecosystems: Concept of an ecosystem, Structure and function of an ecosystem, Producers, consumers and decomposers, Energy flow in the ecosystem. Ecological succession, Food chains, food webs and ecological pyramids. Introduction, types, characteristic features, structure and function of the following ecosystem: a. Forest ecosystem b. Grassland ecosystem c. Desert ecosystem d. Aquatic ecosystems (ponds, streams, lakes, rivers, oceans, estuaries)

Biodiversity and its conservation: - Introduction, definition, genetic, species & ecosystem diversity and biogeographical classification of India. Value of biodiversity: consumptive use, productive use, social, ethical, aesthetic and option values. Biodiversity at global, National and local levels, India as a mega-diversity nation. Hot-spots of biodiversity. Threats to biodiversity: habitat loss, poaching of wildlife, man-wildlife conflicts. Endangered and endemic species of India. Conservation of biodiversity: In-situ and Ex-situ conservation of biodiversity.

Environmental Pollution: definition, cause, effects and control measures of: a. Air pollution b. Water pollution c. Soil pollution d. Marine pollution e. Noise pollution f. Thermal pollution g. Nuclear hazards. Solid Waste Management: causes, effects and control measures of urban and industrial wastes. Role of an individual in prevention of pollution

Social Issues and the Environment: From Unsustainable to Sustainable development, Urban problems related to energy, Water conservation, rain water harvesting, watershed management. Environmental ethics: Issues and possible solutions, climate change, global warming, acid rain, ozone layer depletion, nuclear accidents and holocaust. Wasteland reclamation. Consumerism and waste products. Environment Protection Act. Air (Prevention and Control of Pollution) Act. Water (Prevention and control of Pollution) Act. Wildlife Protection Act. Forest Conservation Act. Issues involved in enforcement of environmental legislation. Public awareness.

Human Population and the Environment: population growth, variation among nations, population explosion, Family Welfare Program. Environment and human health: Human Rights, Value Education, HIV/AIDS. Women and Child Welfare. Role of Information Technology in Environment and human health.

Disaster Management

Natural Disasters- Meaning and nature of natural disasters, their types and effects. Floods, drought, cyclone, earthquakes, landslides, avalanches, volcanic eruptions, Heat and cold waves, Climatic change: global warming, Sea level rise, ozone depletion.

Man Made Disasters- Nuclear disasters, chemical disasters, biological disasters, building fire, coal fire, forest fire, oil fire, air pollution, water pollution, deforestation, industrial waste water pollution, road accidents, rail accidents, air accidents, sea accidents.

Disaster Management- Effect to migrate natural disaster at national and global levels. International strategy for disaster reduction. Concept of disaster management, national disaster management framework; financial arrangements; role of NGOs, community –based organizations and media. Central, state, district and local administration; Armed forces in disaster response; Disaster response; Police and other organizations.

Practical

Pollution case studies. Case Studies- Field work: Visit to a local area to document environmental assets river/ forest/ grassland/ hill/ mountain, visit to a local polluted site-Urban/Rural/Industrial/ Agricultural, study of common plants, insects, birds and study of simple ecosystems-pond, river, hill slopes, etc.

Subject Code	Subject Name	T	P
AEG 103	Renewable Energy and Green Technology	2	1

Objective: Comprehensively describe the non-renewable and renewable energy sources and their relevance in agriculture.

Course outcome: Upon completion of the course students will be able to;

- List energy sources relevant to agricultural needs.
- Understand the production of renewable energy sources and usage at various levels in agriculture.
- Technologies available for large scale production of renewable energy.
- Source the gadgets relevant to produce renewable energy.

Theory

Classification of energy sources, contribution of these of sources in agricultural sector, Familiarization with biomass utilization for biofuel production and their application, Familiarization with types of biogas plants and gasifiers, biogas, bioalcohol, biodiesel and bio-oil production and their utilization as bioenergy resource, introduction of solar energy, collection and their application, Familiarization with solar energy gadgets: solar cooker, solar water heater, application of solar energy: solar drying, solar pond, solar distillation, solar photovoltaic system and their application, introduction of wind energy and their application.

Practical

Familiarization with renewable energy gadgets. To study biogas plants, To study gasifier, To study the production process of biodiesel, To study briquetting machine, To study the production process of bio-fuels. Familiarization with different solar energy gadgets. To study solar photovoltaic system: solar light, solar pumping, solar fencing. To study solar cooker, To study solar drying system. To study solar distillation and solar pond.

Subject Code	Subject Name	T	P
EME 101	Entrepreneurship In Green Business	2	2

Course Objective:

- The prime objective of the course is to sensitize students on various environmental aspects and guide them how to focus on environment in addition to profit.
- To allow students to experience and become imbued with the principles of nature as a source of life and inspiration in order to develop their green mindset as future entrepreneurs.

Learning Outcomes:

- Students will apply the concept of Green entrepreneurship in their Startups to minimize carbon foot print.
- Will evaluate the framework of environmental legal factors, key financials and parameters desired by green investors.
- Will create a business plan suitable for pro-environment investors.

Module I:

Environmental Issues and Green Business: What is a system, how does it work, ecosystems, biodiversity and natural systems, natural cycles and flows – material and energy, Self-regulating mechanism of Earth, Human systems and human impact on natural systems, climate change, pollution, waste, soil degradation, how to preserve nature and natural resources in a better way

Case Study:

1. Ijo Design - Greeting cards made from recycled materials
2. Coffee Paste - coffee grind residuals as paint
3. Trigema's value proposition through responsible business conduct.

Practical Activity: Visit one startup and understand their initiatives to minimize carbon footprint

Module II:

Challenges and Opportunities of Green Business: Challenges of Green entrepreneurship, Govt. regulations on environmental pollution, Benefits provided by Govt. for the ecopreneurs, Opportunities of green entrepreneurship in India, upcoming areas of green entrepreneurship in India

Cases:

1. Coconut Shell Charcoal Briquettes
2. Rice Husks for Rural Electricity
3. Organic Rice Farmer Salamun Budiono

Practical Activity: Analyse the environmental clearance desired by Govt. to start a manufacturing business

Module III:

Principles of Green Entrepreneurship: Differences between entrepreneurship and green entrepreneurship, Definition of green economy, How to start up and manage a green business, Essentials of business startup and operations; such as customer discovery, marketing, sales, customer service, financials, etc. mapping of local possibilities to start up a green business

Cases:

1. Eco Geko Experiential Tours and Volunteer Vacations – Bali
2. Al Madina Student Shuttle Service

Practical Activity: Create a business model canvas for a green business keeping in mind the local resources

Module IV:

Strategy and Planning: Company formation, Team formation, project selection, Intellectual property (IP) issues, effective “elevator pitch” and live presentation, basic understanding of the issues of debt and equity funding, including angel, seed, and venture capital rounds, Sustainable business model canvas, crafting a successful business plan for the green Startup

Case:

1. San Jose Clean Tech - World Leader in Clean Tech Innovation
2. Nature Works LLC is the world's largest manufacturer and supplier of biopolymers
3. Elvis & Kresse - Waste innovation company which makes use of waste to manufacture a range of life-style accessories

Practical Activity: Create a business plan suitable for pro-environment investors

Suggested Readings

- Ryan, R. (2016). *Smartups: Lessons from Rob Ryan’s Entrepreneur America Boot Camp for Start-Ups*, Cornell University Press
- Schaper, M. (2012). *Making Ecopreneurs: Developing Sustainable Entrepreneurship* by Michael Schaper.
- Archer, G.R. (2017). *Environmental Entrepreneurship*.