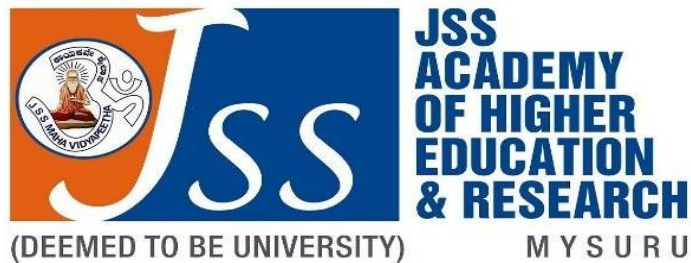




Education for



Sustainable Development Goals



JSS ACADEMY OF HIGHER EDUCATION & RESEARCH
Teaching & Learning of Activities in Achieving
UN Sustainable Development Goals

Teaching & Learning Objective
Handbook
SDG-2-ZERO HUNGER

2024

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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 countries 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-2](#)

[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>



SDG 2 - Zero Hunger



**END HUNGER, ACHIEVE FOOD SECURITY
AND IMPROVED NUTRITION AND PROMOTE
SUSTAINABLE AGRICULTURE**

TEACHING & LEARNING OBJECTIVES FOR SDG 2 JSS MEDICAL COLLEGE & HOSPITAL

Teaching & Learning objectives for SDG 2 “Zero Hunger”

<p>Subject/ topic/ course in regular curriculum relating to SDG -2</p>	<p>Physiology, Biochemistry, Community Medicine, General Medicine, Geriatrics Paediatrics and OBG</p>
<p>Cognitive Teaching & learning objectives</p>	<p>At the end of 1st Professional year the learner should be able to,</p> <ol style="list-style-type: none"> 1. Classify food and describe the nutrient values of each type of foods 2. Describe the causes and consequences of malnutrition and obesity at various age groups <p>At the end of 3rd Professional year part -1, the learner should be able to,</p> <ol style="list-style-type: none"> 1. Understand the burden of hunger, hidden hunger and malnutrition at state, national and international level 2. Describe the methods of nutritional assessment at community level 3. Describe the causes, clinical features, prevention, and control of nutritional health problems 4. Discuss various community nutrition programs, policies and laws and their impact on nutritional status of community <p>At the end of 3rd Professional year part -2 the learner should be able to,</p> <ol style="list-style-type: none"> 1. Describe importance and methods of nutritional assessment of vulnerable population (Under five children, adolescents, pregnant/lactating women, elderly etc) 2. Describe the methods of dietary counselling at various scenarios

<p>Socio-emotional Teaching & learning objectives</p>	<p>At the end of final year the learner should be able to</p> <ol style="list-style-type: none"> 1. Counsel the vulnerable individuals, families and communities on balanced diet and nutritional health problems 2. Counsel the individuals requiring special nutritional interventions like Hypertensives and diabetics on their dietary and nutrient practices 3. Can reflect on nutritional status, causes and consequences of under-nutrition / obesity based on patient and community interaction. 4. Can feel empathy, responsibility and solidarity for and with people suffering from hunger and malnutrition
<p>Behavioural Teaching & learning objectives</p>	<p>At the end of final year the learned should be able to</p> <ol style="list-style-type: none"> 1. Demonstrate various methods of nutritional assessment at individual, family and community levels 2. Assess the calorie and protein intakes of individual, family and community and provide suitable advise based on the outcomes of assessment 3. Conduct health education sessions at community setting on causes, consequences and prevention of nutritional health problems at different age groups

Topics for SDG 2 “Zero Hunger”

- Role of micro and macro-nutrients in maintaining health
- Concept of hunger, hidden hunger- their burden, risk factors at state, national and international levels
- Causes, identification, and consequences of various nutritional health issues like (PEM, SAM, Micro-nutrient deficiencies, overweight and obesity)
- Sociocultural factors influencing hunger and malnutrition.
- Nutritional assessment methods at individuals, families, and community settings
- Nutritional assessment of vulnerable people visiting the health care establishments and nutritional counselling
- Community Nutrition programs, policies, legislations, and strategies
- Methods of nutrition health education and counselling
- Impact of hunger and malnutrition beyond health

Learning approaches and methods for SDG 2 “Zero Hunger”

- Demonstration of foods with their special nutritional values and their requirement standards among human beings
- Observation of nutrition weeks at peripheral health centres by involving stakeholders at community setting. Demonstration of foods with nutrient values, explaining the importance of balanced diet and special nutritional requirements at the periods of vulnerability
- Case studies, poster competition, essay writing on the causes, consequences and impact of hunger and malnutrition
- Case based discussions on PEM, SAM, Micro-nutrient deficiencies
- Nutritional assessment activities as a part of family health advisory surveys in Community Medicine
- Assessment of nutritional status of vulnerable individuals and nutrition counselling at health care establishment set up

TEACHING & LEARNING OBJECTIVES FOR SDG 2

JSS DENTAL COLLEGE & HOSPITAL

Subject/ topic/ course in regular curriculum relating to SDG 2	<ul style="list-style-type: none"> ● Nutrition and Health, Nutritional Deficiency disorders in India, National Nutritional Program, Strategies to reduce Nutritional Deficiency disorder at local and regional level. 	<ul style="list-style-type: none"> ● Dept of Oral Pathology/ Oral Medicine & radiology/ Public health Dentistry & All other specialties ● III BDS IV BDS INTERNS & PG's
Cognitive Teaching & learning objectives	<ul style="list-style-type: none"> ● The learner knows about hunger and malnutrition and their main physical and psychological effects on human life, and about specific vulnerable groups. ● The learner knows about the amount and distribution of hunger and malnutrition locally, nationally and globally, currently as well as historically. ● The learner knows the main drivers and root causes for hunger at the individual, local, national and global level. ● The learner understands the need for sustainable agriculture to combat hunger and malnutrition worldwide and knows about other strategies to combat hunger, malnutrition and poor diets 	
Socio-emotional Teaching & learning objectives	<ul style="list-style-type: none"> ● The learner can communicate on the issues and connections between combating hunger and promoting sustainable agriculture and improved nutrition. ● The learner can create a vision for a world without hunger and malnutrition. ● The learner can reflect on their own values and deal with diverging values, attitudes, and strategies in relation to combating hunger and malnutrition and promoting sustainable agriculture. ● The learner can feel empathy, responsibility, and solidarity for and with people suffering from hunger and malnutrition. 	
Behavioural Teaching & learning objectives	<ul style="list-style-type: none"> ● The learner can evaluate and implement actions personally to combat hunger and to promote sustainable agriculture. ● The learner can evaluate, participate in and influence decision-making related to hunger and malnutrition and the promotion of sustainable agriculture. ● The learner can take on critically their role as an active global citizen in the challenge of combating hunger. ● The learner can change their production and consumption practices in order to contribute to the combat against hunger and the promotion of sustainable agriculture. 	

Suggested topics for SDG 2 “Zero Hunger”

Definition of the concept of hunger and malnutrition

Groups that are particularly vulnerable to hunger and malnutrition

Main drivers and root causes of hunger and malnutrition, including the relation between climate change and food security and the depletion of soil quality

Consequences of hunger and malnutrition on the health and well-being of people, including practices like migration as adaptation

Physical, emotional and socio-cultural functions of food Hunger in relation to food abundance, obesity and food waste

Global food – import, export, cash crops, international taxes, subsidies, trading systems, merits, risks and challenges of utilising genetically modified organisms

Institutions and movements related to hunger and sustainable agriculture like the UN’s Food and Agriculture Organization (FAO), Foodwatch, Slow Food, community-based agriculture, the international movement Via Campesina, etc.

Concepts and principles of sustainable agriculture, including climate-resilient practices, organic farming, biodynamic farming, permaculture and agro-forestry

Biodiversity of seeds, plants and animals, particularly in relation to wild species

Examples of learning approaches and methods for SDG 2 “Zero Hunger”

Perform role-plays with small-scale producers versus big enterprises in a global market

Carry out scenario development and analysis of local or national food production and consumption systems and/or about the impact of natural hazards and disasters in the food production systems

Carry out case study analyses of adequate and non-adequate public policies or management strategies of enterprises to combat hunger, reduce food waste and promote sustainable agriculture

Organize excursions and field trips to places where sustainable agriculture is practiced

Follow food from farm to fork – growing, harvesting and preparing food, e.g. in urban or school gardening projects

Engage students in efforts to connect leftover food with people in need
Conduct a Life

TEACHING & LEARNING OBJECTIVES FOR SDG 2 JSS COLLEGE OF PHARMACY-MYSORE

Subject/ topic/ course in regular curriculum relating to SDG 2	Biochemistry, Human anatomy and Physiology, Therapeutics, Pharmacognosy
Cognitive Teaching & learning objectives	<p>At the end of final year, the learner should be able to,</p> <ul style="list-style-type: none"> • Types of food and its nutrient values • The causes and consequences of malnutrition and related diseases • Medicinal Plant cultivation and its applications
Socio-emotional Teaching & learning objectives	<p>At the end of final year, the learner should be able to</p> <ul style="list-style-type: none"> • Provide Counseling to the patients with malnutrition and also to provide necessary inputs in diet control for individuals with obesity, diabetes etc • Council pregnant and lactating woman about their special dietary requirements
Behavioural Teaching & learning objectives	<p>At the end of final year, the learned should be able to</p> <ul style="list-style-type: none"> • Conduct health education sessions at community pharmacies • To educate the patients about healthy diet and its benefits • Organize seminars to educate the public regarding the mitigation of food wastage • Educate budding entrepreneurs regarding value addition via food processing and bridging the gap between overproduction and shortage of fruits and vegetables

Examples of learning approaches and methods for SDG 2 “Zero Hunger”

- Displaying Zero hunger posters in boys & girls hostel mess and in canteen.
- Donating one day food to “Akshaya pathra” Foundation to symbolize our commitment toward the SDG 2.
- Creating a short video to bring awareness about SDG 2 and display it in the college. (Lobby area T.V).
- Awareness programme in annual NSS camp depicting food wastage.
- Educate the public regarding certain government scheme towards eradicating malnutrition.

Suggested topics for SDG 2 “Zero Hunger”

- Role of various biochemical pathways in maintaining good health
- Effects of balanced diet in malnutrition
- Environmental science for improving the agricultural outputs

TEACHING & LEARNING OBJECTIVES FOR SDG 2

JSS COLLEGE OF PHARMACY, OOTY

<p>Subject/ topic/ course in regular curriculum relating to SDG 2</p>	<p>• I Pharm.D Subject: Medicinal Biochemistry Topic: Biomolecules: Introduction, classification, chemical nature and biological role of carbohydrate, lipids, amino acids and proteins. Cognitive Teaching & learning objective:</p> <ul style="list-style-type: none"> • Learners will understand that chronic hunger is one of the causation factors of malnutrition. <p>Socio-emotional Teaching & learning objectives:</p> <ul style="list-style-type: none"> • The learner can create awareness about the importance of nutritional health among society. <p>Behavioural Teaching & learning objectives:</p> <ul style="list-style-type: none"> • Learners will apply and follow the concepts about nutrition and malnutrition. They will raise awareness and guide the public about nutrients. <p>I B.Pharm Subject: Biochemistry Topic: Biomolecules: Introduction, classification, chemical nature and biological role of carbohydrate, lipids, amino acids and proteins. Cognitive Teaching & learning objective:</p> <ul style="list-style-type: none"> • Learners will understand the metabolism of nutrient molecules in physiological and pathological conditions. • Learners will understand the concept of poverty induced malnutrition. <p>Socio-emotional Teaching & learning objectives:</p> <ul style="list-style-type: none"> • The learner can create awareness about the importance of nutritional health among society. <p>Behavioural Teaching & learning objectives:</p> <ul style="list-style-type: none"> • Learners will apply and follow the concepts about nutrition and malnutrition. <p>II D.Pharm Subject: Biochemistry and Clinical Pathology Topic: Brief chemistry and role of Biomolecules: Cognitive Teaching & learning objective:</p> <ul style="list-style-type: none"> • Learners will understand the association between hunger & malnutrition. <p>Socio-emotional Teaching & learning objectives:</p> <ul style="list-style-type: none"> • The learner can create awareness about the importance of nutritional health among society. <p>Behavioural Teaching & learning objectives:</p> <ul style="list-style-type: none"> • Learners will apply and follow the concepts about nutrition and malnutrition. They will raise awareness among the public. <p>I D Pharm Subject: Social Pharmacy Topic : Nutrition and Health - Basics of nutrition, Balanced Diet, Malnutrition, Ill effects of junk foods, Calorific and nutritive values of various foods Reproductive and Child Health - Nutritional aspects, Counseling Children on Junk food and balanced diet</p>
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Preparation of various charts on nutrition

Cognitive Teaching & learning objectives:

- The learner knows about hunger and malnutrition and their main physical and psychological effects on human life, and about specific vulnerable groups.
- The learner understands the need for sustainable agriculture to combat hunger and malnutrition worldwide and knows about other strategies to combat hunger, malnutrition and poor diets

Socio-emotional Teaching & learning objectives:

- The learner can create a vision for a world without hunger and malnutrition.

Behavioural Teaching & learning objectives:

- The learner can evaluate, participate in and influence decision-making related to hunger and malnutrition and the promotion of sustainable agriculture.

II Pharm D

Subject: Community Pharmacy

Topic: Balanced diet, treatment and prevention of deficiency disorders

Cognitive Teaching & learning objectives:

- The learner knows about hunger and malnutrition and their main physical and psychological effects on human life, and about specific vulnerable groups.
- The learner knows about the amount and distribution of hunger and malnutrition locally, nationally and globally, currently as well as historically.

Socio-emotional Teaching & learning objectives:

- The learner can create a vision for a world without hunger and malnutrition.
- The learner can feel empathy, responsibility, and solidarity for and with people suffering from hunger and malnutrition.

Behavioural Teaching & learning objectives:

- The learner can take on critically their role as an active global citizen in the challenge of combating hunger.

II Pharm D

Subject: Pathophysiology

Topic: Environmental and nutritional diseases - Protein calorie malnutrition, vitamins, obesity, pathogenesis of starvation

Cognitive Teaching & learning objectives:

- The learner knows about hunger and malnutrition and their main physical and psychological effects on human life, and about specific vulnerable groups.
- The learner knows about the amount and distribution of hunger and malnutrition locally, nationally and globally, currently as well as historically.
- The learner knows the main drivers and root causes for hunger at the individual, local, national and global level.
- The learner understands the need for sustainable agriculture to combat hunger and malnutrition worldwide and knows about other strategies to combat hunger, malnutrition and poor diets

	<p>Socio-emotional Teaching & learning objectives:</p> <ul style="list-style-type: none"> • The learner can reflect on their own values and deal with diverging values, attitudes, and strategies in relation to combating hunger and malnutrition and promoting sustainable agriculture. <p>Behavioural Teaching & learning objectives:</p> <ul style="list-style-type: none"> • The learner can evaluate, participate in and influence decision-making related to hunger and malnutrition and the promotion of sustainable agriculture. <p>IV B Pharm - VIII Semester Subject: Social and Preventive Pharmacy Topic: Social and health education: Food in relation to nutrition and health, Balanced diet, Nutritional deficiencies, Vitamin deficiencies, Malnutrition and its prevention.</p> <p>Cognitive Teaching & learning objective:</p> <ul style="list-style-type: none"> • The learner understands the concepts of extreme and relative poverty and can critically reflect on their underlying cultural and normative assumptions and practices. <p>Behavioural Teaching & learning objectives:</p> <ul style="list-style-type: none"> • The learner can propose solutions to address systemic problems related to poverty.
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TEACHING & LEARNING OBJECTIVES FOR SDG 2

FACULTY OF HEALTH SYSTEM MANAGEMENT STUDIES

Subject/ topic/ course in regular curriculum relating to SDG 2	<ul style="list-style-type: none"> • Environmental studies/Ecosystem/Semester-1-BBAHHSM • Business Economics/Managerial and Health Economics/Analysis of Demand and Supply/Semester- 2-BBAHHSM/ Semester-1- MBAHA and PA • HRM/Introduction to HRM/Semester-5-6-BBAHHSM/Semester-2-MBAHA and MBAPA • Constitution of India/semester-4-BBAHHSM • Basic Health Sciences/ Organ Systems/ Semester6-BBAHHSM • Epidemiology/ National programs/ Semester3- MBAHA
Cognitive Teaching & learning objectives	<ul style="list-style-type: none"> • The learner acquires basic knowledge about environment and its allied problems. • The learner understands about fundamental concepts of human organ system functioning and importance of organ health • Learners also learn about various acts pertaining to wages, compensation and gratuity • The learner learns about various macro and micro environmental factors that impact economic health of societies <p style="text-align: center;"><u>Training Programs- Entrepreneurship Development</u></p>



Socio-emotional Teaching & learning objectives

- The learner will be able to create awareness on natural resources preservation.
- The learner can understand the problems of underprivileged societies and health issues
- The learner appreciates the concept of health and its importance in building up the nation

Awareness Programs on Environmental Issues & Solutions



Behavioural Teaching & learning objectives

- With the understanding of the concepts, the learner can demonstrate individual responsibility in addressing the environmental issues.
- The learner can exhibit behavioral changes in terms of purchase and consumption of food components
- After identifying the importance of food that we consume, learner also demonstrates responsible behavior to teach others in terms of food conservation

Environmental Outreach Programs



TEACHING & LEARNING OBJECTIVES FOR SDG 2

FACULTY OF LIFE SCIENCES

SCHOOL OF LIFE SCIENCES ,OOTY

<p>Subject/ topic/ course in regular curriculum relating to SDG 2</p>	<ul style="list-style-type: none"> • Course: Food, Nutrition and Dietetics <ul style="list-style-type: none"> ○ Community Nutrition, Public Health and Community Nutrition ○ Food Preservation and Adulteration ○ Food and Nutrition Security ○ Dairy Technology • Course: BSc Biotechnology <ul style="list-style-type: none"> ○ Biotechnological Business Management ○ Agricultural Biotechnology • Course: BSc Biochemistry <ul style="list-style-type: none"> ○ Nutrition • Course: BSc Microbiology <ul style="list-style-type: none"> ○ Food and Dairy Microbiology
<p>Cognitive Teaching & learning objectives</p>	<ul style="list-style-type: none"> • The learner knows about hunger and malnutrition and their main physical and psychological effects on human life, and about specific vulnerable groups. • The learner knows about the amount and distribution of hunger and malnutrition locally, nationally and globally, currently as well as historically. • The learner knows the main drivers and root causes for hunger at the individual, local, national and global level. • The learner understands the need for sustainable agriculture to combat hunger and malnutrition worldwide and knows about other strategies to combat hunger, malnutrition and poor diets
<p>Socio-emotional Teaching & learning objectives</p>	<ul style="list-style-type: none"> • The learner can communicate on the issues and connections between combating hunger and promoting sustainable agriculture and improved nutrition. • The learner can create a vision for a world without hunger and malnutrition. • The learner can reflect on their own values and deal with diverging values, attitudes, and strategies in relation to combating hunger and malnutrition and promoting sustainable agriculture. • The learner can feel empathy, responsibility, and solidarity for and with people suffering from hunger and malnutrition.
<p>Behavioural Teaching & learning objectives</p>	<ul style="list-style-type: none"> • The learner can evaluate and implement actions personally to combat hunger and to promote sustainable agriculture. • The learner can evaluate, participate in and influence decision-making related to hunger and malnutrition and the promotion of sustainable agriculture. • The learner can take on critically their role as an active global citizen in the challenge of combating hunger. • The learner can change their production and consumption practices in order to contribute to the combat against hunger and the promotion of sustainable agriculture.

Suggested topics for SDG 2 “Zero Hunger”

Definition of the concept of hunger and malnutrition

Groups that are particularly vulnerable to hunger and malnutrition

Main drivers and root causes of hunger and malnutrition, including the relation between climate change and food security and the depletion of soil quality

Consequences of hunger and malnutrition on the health and well-being of people, including practices like migration as adaptation

Physical, emotional and socio-cultural functions of food Hunger in relation to food abundance, obesity and food waste

Global food – import, export, cash crops, international taxes, subsidies, trading systems, merits, risks and challenges of utilising genetically modified organisms

Institutions and movements related to hunger and sustainable agriculture like the UN’s Food and Agriculture Organization (FAO), Foodwatch, Slow Food, community-based agriculture, the international movement Via Campesina, etc.

Concepts and principles of sustainable agriculture, including climate-resilient practices, organic farming, biodynamic farming, permaculture and agro-forestry

Biodiversity of seeds, plants and animals, particularly in relation to wild species

[Factors, causes and reasons for malnutrition in children](#)

[Role of nutraceuticals and functional foods to overcome malnutrition](#)

[Practice of healthy personal hygiene and food habits - an important component to avoid malnutrition](#)

[The concept of “Eat to Live and not Live to Eat” - Relationship between hunger and food wastage](#)

Examples of learning approaches and methods for SDG 2 “Zero Hunger”

Perform role-plays with small-scale producers versus big enterprises in a global market

Carry out scenario development and analysis of local or national food production and consumption systems and/or about the impact of natural hazards and disasters in the food production systems

Carry out case study analyses of adequate and non-adequate public policies or management strategies of enterprises to combat hunger, reduce food waste and promote sustainable agriculture

Organize excursions and field trips to places where sustainable agriculture is practiced

Follow food from farm to fork – growing, harvesting and preparing food, e.g. in urban or school gardening projects

Engage students in efforts to connect leftover food with people in need Conduct a Life

[Engage students in No hunger campaigns and rallies locally](#)

TEACHING & LEARNING OBJECTIVES FOR SDG 2

SCHOOL OF LIFE SCIENCE, MYSORE

DEPARTMENT OF MICROBIOLOGY

Subject/ topic/ course in regular curriculum relating to SDG 2

- Biofertilizers & Biopesticides (BSc IV Sem)
- Food & Dairy Microbiology; Agricultural Microbiology (BSc V Sem)
- Food & Dairy Technology; Biofertilizer, Biomanure & Biopesticides (MSc II Sem)

Cognitive Teaching & learning objectives

- Understands the concepts of hunger and malnutrition and their impacts on human life with particular reference to our economies, health, education, equality and social development.
- Understands the importance for sustainable agriculture, roles played by food and dairy industries to combat hunger and malnutrition.

Socio-emotional Teaching & learning objectives

- Establish connections with the stakeholders and promote sustainable agriculture, food and dairy technologies for improved nourishment and to overcome malnutrition.
- Can create awareness on the importance and the applications of biofertilizers, biopesticides and organic farming for the sustainable agriculture

Behaviorial Teaching & Learning objectives

- The learner shall get experienced through the experiments that can be performed to visualize the impact of biofertilizers and biopesticides in the sustainable agriculture and productivity.
- The learner can promote the soil health through the enrichment of nutrients in-turn addressing the plant health and crop health targetting for better productivity.
- The learner can influence decision-making aspects related to hunger and malnutrition and bring about a change in the production and consumption practices of various agricultural, food and dairy commodities to have a focused balanced diet.

Learning approaches and methods for SDG 2 “Zero Hunger”

- Strategies to reduce food spoilage and food-borne outbreaks,
- Strategies to increase food production
- Study microbe–plant interaction to increase crop yield.
- Gut microbiota and satiety research.

Suggested topics for SDG 2 “Zero Hunger” for students workshop

- Training program for production of fermented foods and probiotics
- Detection of food spoilage & food-borne bacteria & fungi
- Promote sustainable agriculture practices
- Cultivation of mushroom and other single cell proteins
- Prevent post harvest losses and hygienic storage of food

TEACHING & LEARNING OBJECTIVES FOR SDG 2

DEPT. OF ENVIRONMENTAL SCIENCES

Course Name in curriculum relating to SDG 2	<ol style="list-style-type: none"> 1. Natural Resources and Management (DSC 02) 2. Biodiversity Conservation and Management (DSC 05) 3. Water Energy and Food Nexus (DSE 04a)
Cognitive Teaching & learning objectives	<ul style="list-style-type: none"> • The learner knows about hunger, malnutrition, resource availability and their main physical and psychological effects on human life, and about specific vulnerable groups. • The learner knows about the amount and distribution of hunger and malnutrition locally, nationally, and globally, currently as well as historically. • The learner knows the main drivers and root causes of hunger at the individual, local, national, and global levels. • The learner understands the need for sustainable agriculture, environmental conservation, water quality, etc. to combat hunger and malnutrition worldwide and knows about other strategies to combat hunger, malnutrition, and water borne poor diets
Socio-emotional Teaching & learning objectives	<ul style="list-style-type: none"> • The learner can communicate the issues and connections between combating hunger and promoting sustainable agriculture resource and water management and improved nutrition. • The learner can create a vision for a world without hunger and malnutrition. • The learner can reflect on their own values and deal with diverging values, attitudes, and strategies in relation to combating hunger and malnutrition and promoting sustainable agriculture and water management. • The learner can feel empathy, responsibility, resource conservation, water management and solidarity for and with people suffering from hunger and malnutrition.
Behavioral Teaching & learning objectives	<ul style="list-style-type: none"> • The learner can evaluate and implement actions personally to combat hunger, promote sustainable agriculture and environmental management. • The learner can evaluate, participate in and influence decision-making related to hunger and malnutrition and the promotion of sustainable

	<p>agriculture.</p> <ul style="list-style-type: none"> • The learner can take on critically their role as an active global citizen in the challenge of combating hunger. • The learner can change their environmental management strategies and consumption practices to contribute to the combat against hunger and the promotion of sustainable agriculture and food production.
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Suggested topics for SDG 2 “Zero Hunger”

<ul style="list-style-type: none"> • Definition of the concept of hunger and malnutrition, water quality, water resource for food production • Groups that are particularly vulnerable to hunger and malnutrition in connection to climate change • Main drivers and root causes of hunger and malnutrition, including the relation between climate change and food security, water resources and the depletion of soil quality • Consequences of hunger and malnutrition on the health and well-being of people, including practices like migration as adaptation • Physical, emotional, and socio-cultural functions of food Hunger in relation to food abundance, obesity, and food waste • Global food – import, export, cash crops, international taxes, subsidies, trading systems, merits, risks, and challenges of utilizing genetically modified organisms • Institutions and movements related to hunger and sustainable agriculture like the UN’s Food and Agriculture Organization (FAO), Food watch, Slow Food, community-based agriculture, the international movement Via Campesino, etc. • Concepts and principles of sustainable agriculture, including climate-resilient practices, organic farming, biodynamic farming, permaculture, and agro-forestry • Biodiversity of seeds, plants, and animals, particularly in relation to wild species
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Examples of learning approaches and methods for SDG 2 “Zero Hunger”

<ul style="list-style-type: none"> • Perform role-plays with small-scale producers versus big enterprises in a global market • Carry out scenario development and analysis of local or national food production and consumption systems and/or about the impact of natural hazards and disasters in the food production systems • Carry out case study analyses of adequate and non-adequate public policies or management strategies of enterprises to combat hunger, reduce food waste and promote sustainable agriculture • Organize excursions and field trips to places where sustainable agriculture is practiced • Follow food from farm to fork – growing, harvesting and preparing food, e.g. in urban or school gardening projects • Engage students in efforts to connect leftover food with people in need “Conduct a Life”

TEACHING & LEARNING OBJECTIVES FOR SDG 2 DEPT. OF NUTRITION & DIETETICS

Subject/ topic/ course in regular curriculum relating to SDG 2	<ul style="list-style-type: none"> • The Course MSc in Nutrition & Dietetics • All the course units & topics • Nutrition is the key point for the SDG 2 'End hunger, achieve food security and improved nutrition and promote sustainable agriculture' and is an essential component for achieving many of the other targets. • The course content is in alignment to the nutritional aspects of the SDGs aiming to promote healthy and sustainable diets and ensure food security globally.
Cognitive Teaching & learning objectives	<p>At the end of 1st year the learner should be able to,</p> <ul style="list-style-type: none"> • Know about interrelationship between food, nutrition and health, and in disease conditions. • Learn about the physical, psychological environmental effects factors leading to hunger, as well as hidden hunger, their possible impact on specific / vulnerable groups, and the concept of triple burden of malnutrition. • Know about the prevalence and distribution of hunger and malnutrition locally, nationally and globally, currently as well as historically. <p>At the end of 2nd year and course the learner should be able to,</p> <ul style="list-style-type: none"> • understand the need for sustainable agriculture to combat hunger and malnutrition and knows about other strategies to combat hunger, malnutrition and poor diets. • The learner can plan and propose research proposals and plans to overcome hidden hunger or any health related problem. • The learner understands the current food production rate and importance of reducing food wastage which can contribute greatly in achieving Zero Hunger SDG goal.
Socio-emotional Teaching & learning objectives	<p>At the end of 2nd year and course the learner should be able to,</p> <ul style="list-style-type: none"> • The learner can create a strategic plan for tackling hunger and malnutrition. • The learner can educate and create awareness on sustainable agricultural practices, promote organic & kitchen farming at home or educational institutions. • The learner can reflect on their own values and deal with diverging values, attitudes, and strategies in relation to combating hunger and malnutrition and promoting sustainable agriculture. • The learner can feel empathy, responsibility, and solidarity for and with people suffering from hunger and malnutrition.

<p>Behavioural Teaching & learning objectives</p>	<ul style="list-style-type: none"> • The learner can evaluate and plan actions following various standard guidelines to combat hunger and malnutrition among all. • The learner can participate in decision-making or framing policies for reducing to hunger and malnutrition and the promotion of sustainable health practices. • The learner can take on critically their role as an active professional in the challenge of combating hunger and triple burden of malnutrition. <p>At the end of 2nd year and course the learner should be able to,</p> <ul style="list-style-type: none"> • The learner can effectively implement the positive impact of research work to overcome hidden hunger or manage any health related problem • The learner can implement action plans for reducing food wastage such as food distribution, reaching the unreached population, creating awareness on proper diet and balanced food intake for health and disease conditions. • The learner can implement effective strategies towards ending hunger and food insecurity. • The learner will understand his/her role as nutritionist/dietician/health professional to educate the target group in achieving food security in turn successfully achieving Zero hunger goal.
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Suggested topics for SDG 2 “Zero Hunger”

- Understanding the role of nutritionist / dietician for achieving Zero Hunger among ALL.
- Inter-relationship between food, nutrition and health, and in disease conditions strategic plan to combat hunger and malnutrition, to promote sustainable agriculture.
- Identification and educating vulnerable target population about hunger and malnutrition.

Examples of learning approaches and methods for SDG 2 “Zero Hunger”

- Workshops, R&D activities on positive impact of research work to overcome hidden hunger or manage any health related problem.
- Educating & awareness programs on reducing food wastage such as food distribution, reaching the unreached population,
- Creating awareness on proper diet and balanced food intake for health and disease conditions.
- Carry out survey analyses on management strategies to combat hunger, reduce food waste and promote sustainable agriculture.

MSc Sports Nutrition & Management

Subject/ topic/ course in regular curriculum relating to SDG 2	<ul style="list-style-type: none"> • Human physiology; Physiology and hematology; Nutritional assessment in Sports Nutrition; Body composition and metabolism
Cognitive Teaching & learning objectives	<p>At the end of 1st Professional year, the learner should be able to</p> <ul style="list-style-type: none"> • Know about the structure, normal functioning of human body and their body parts and their main physical and psychological effects on human life, related to nutrition perspective. • Understand the hunger and satiety sensations as influenced by hormones in the human body. Hunger motivates the consumption of food and helps in satiation. • Know the main drivers of malnutrition through anthropometric assessment and root causes of the same. • Understand concept of food group, sources, functions and metabolism of nutrients, factors affecting their utilization and need to include balanced diet to combat physiological hunger.
Socio-emotional Teaching & learning objectives	<p>At the end of the program, the student should be able to</p> <ul style="list-style-type: none"> • Communicate on the issues and connections between structural and physiological functions and utilization of nutrients in the body to achieve improved nutrition. • Create a vision for a world without physiological hunger and malnutrition. • Reflect on their own values and deal with diverging values, attitudes, and strategies in relation to combating hunger and malnutrition and promoting importance of nutrition. • Feel empathy, responsibility, and solidarity for and with people suffering from hunger and malnutrition.
Behavioral Teaching & learning objectives	<p>At the end of the program, the student should be able to</p> <ul style="list-style-type: none"> • Evaluate and implement actions personally to combat malnutrition. • Evaluate, participate in and influence decision-making related to malnutrition and promotion of healthy eating. • Take on critically their role as an active global citizen in the challenge of combating malnutrition. • Change their consumption practices in order to contribute to the combat against malnutrition and promotion of healthy eating.

Examples of learning approaches and methods for SDG 2 “Zero Hunger”

Perform anthropometric measurement to analyze poverty-related malnutrition

Carry out scenario development and analysis of impact of nutrition on poverty alleviation

Carry out case study analyses of adequate and non-adequate public policies or management strategies of enterprises to combat hunger, reduce food waste and promote sustainable agriculture

Organize excursions and field trips to places where nutrition program is practiced

Follow food from farm to fork – growing, harvesting and preparing food, e.g., in urban or school gardening projects

Engage students in efforts to connect leftover food with people in need

Suggested topics for SDG 2 “Zero Hunger”

Definition of the concept of hunger and malnutrition and its effect on body composition

Groups that are particularly vulnerable to hunger and malnutrition

Main drivers and root causes of hunger and malnutrition, including the relation between climate change and food security and the depletion of soil quality

Consequences of hunger and malnutrition on the health and well-being of people, including practices like migration as adaptation

Physical, emotional and socio-cultural functions of food

Hunger in relation to food abundance, obesity & food waste

Institutions and movements related to hunger and sustainable agriculture like the UN’s Food and Agriculture Organization (FAO), Foodwatch, Slow Food, community-based agriculture, the international movement Via Campesina, etc.

BSc Food, Nutrition & Dietetics

<p>Subject/ topic/ course in regular curriculum relating to SDG -2</p>	<p>Introduction to Food Science/ Basics of Nutrition & Dietetics/ Food chemistry/ Health & Wellness/ Development of value enhanced products/ Food Biotechnology/ Food Processing & Technology/ Public Health & Community Nutrition/ Food & Nutrition Security</p>
<p>Cognitive Teaching & learning objectives</p>	<p>At the end of 1st & 2 Professional year the learner should be able to,</p> <ul style="list-style-type: none"> ▪ Classify food and describe the nutrient values of each type of foods ▪ Describe the causes and consequences of malnutrition at various age groups ▪ Know the need of food and nutrients towards combating hunger and malnutrition and their main physical and psychological effects on human life, and about specific vulnerable groups. ▪ Know the food group system and food distribution system towards combating hunger and malnutrition locally, nationally and globally, currently as well as historically. ▪ Know the impact of quality of food development main drivers and root causes for hunger at the individual, local, national and global level. ▪ understand the need for sustainable food and agriculture system to combat hunger and malnutrition worldwide and knows about other strategies to combat hunger, malnutrition and poor diets <p>At the end of 3rd Professional year, the learner should be able to,</p> <ul style="list-style-type: none"> ▪ Understand the burden of hunger, hidden hunger and malnutrition at state, national and international level ▪ Describe the methods of nutritional assessment at community level ▪ Describe the causes, clinical features, prevention, and control of nutritional health problems ▪ Discuss various community nutrition programs, policies and laws and their impact on nutritional status of community <p>At the end of 3rd Professional year the learner should be able to,</p> <ul style="list-style-type: none"> ▪ Describe importance and methods of nutritional assessment of vulnerable population (Under five

	<p>children, adolescents, pregnant/lactating women, elderly etc)</p> <ul style="list-style-type: none"> ▪ Describe the methods of dietary counselling at various scenarios
Socio-emotional Teaching & learning objectives	<p>At the end of final year the learner should be able to</p> <ul style="list-style-type: none"> ▪ Analyze the vulnerable individuals, families and communities on balanced diet and nutritional health problems ▪ Analyze the individuals metabolic issues, life style disease on requiring special nutritional interventions including dietary and nutrient practices ▪ evaluate and implement personal food and nutrition knowledge aptitude practices to combat hunger and to promote sustainable food and agriculture. ▪ evaluate, participate and influence decision-making related nutrition recommendations to combat hunger and malnutrition and the promotion of sustainable agriculture. ▪ Critically could act as an active global citizen, nutritionist, in the challenge of combating hunger

Examples of learning approaches and methods for SDG2 “Zero Hunger”

- Demonstration of foods with their special nutritional values and their requirement standards among human beings
- Observation of nutrition weeks at peripheral health centres , community setting. Demonstration of foods with nutrient values, explaining the importance of balanced diet and special nutritional requirements at the periods of vulnerability
- Case based discussions on PEM, SAM, Micro-nutrient deficiencies
- Nutritional assessment activities as a part of family health advisory surveys
- Assessment of nutritional status of vulnerable individuals and nutrition counselling at health care establishment set up

Suggested topics for SDG2 “Zero Hunger”

- Role of micro and macro-nutrients in maintaining health
- Concept of hunger, hidden hunger- their burden, risk factors at state, national and international levels
- Causes, identification, and consequences of various nutritional health issues like (PEM, SAM, Micro-nutrient deficiencies, overweight and obesity)
- Sociocultural factors influencing hunger and malnutrition.
- Nutritional assessment of vulnerable people , visiting the health care establishments and nutritional counselling
- Community Nutrition programs, policies, legislations, and strategies
- Methods of nutrition health education and counselling
- Impact of hunger and malnutrition beyond health

TEACHING & LEARNING OBJECTIVES FOR SDG 2

DIVISION OF BIOCHEMISTRY

Subject/ topic/ course in regular curriculum relating to SDG 2	<ul style="list-style-type: none"> • Nutritional Biochemistry • Nutrition
Cognitive Teaching & learning objectives	<p>At the end of the first unit,</p> <ul style="list-style-type: none"> • The learner knows about Concept of nutrition, essential nutrients and their classification. • The learner is acquainted with essential terminology associated with nutrition. <p>At the end of the second unit, The learner should be able to:</p> <ul style="list-style-type: none"> • Describe the roles of carbohydrate in the body. • Identify food sources containing carbohydrates. • Explain the factors that constitute a high-quality carbohydrate. • Briefly describe the process of carbohydrate digestion and absorption. • Outline the process of carbohydrate metabolism. • Define and describe glycemic index. • List several benefits of a high-fiber diet. • List various types of carbohydrates and their effect on athletic performance, weight management, and overall health. <p>At the end of the third unit,</p> <ul style="list-style-type: none"> • List the functions of fat in the body. • Describe the difference between saturated fat, unsaturated fat, and trans fat. • Outline the process of fat digestion, absorption, and storage. • Describe the effect of various fats on health and disease risk. • Describe the effect of fat intake on performance. • List several principles to share with clients when discussing fat intake. <p>At the end of the fourth unit,</p> <ul style="list-style-type: none"> • Define the term micronutrient and explain the different categories of micronutrients. • Describe the role of electrolytes in athletic performance. • List the micronutrients most commonly deficient in athletes. • Describe the benefit or lack of benefit of vitamin and mineral supplementation. • Explain the importance of water for health and athletic performance. <p>In general, the course aims to provide the following.</p> <ul style="list-style-type: none"> • Nutrition and malnutrition and their main physical and pathological effects on human life, and about specific vulnerable groups. • The amount of different nutrients and their beneficial effects and also malnutrition locally, nationally and globally, currently as well as historically. • Main drivers and root causes for hunger at the individual, local, national and global level. • Need for different micro and macro nutrients to combat hunger and malnutrition worldwide and knows about other strategies to combat hunger, malnutrition and poor diets

Socio-emotional Teaching & learning objectives	<ul style="list-style-type: none"> • The learner can communicate on the issues and connections between combating hunger and promoting sustainable complete diet and improve the health and wellness. • The learner can create a vision for a world without hunger and malnutrition. • The learner can reflect on their own values and deal with diverging values, attitudes, and strategies in relation to combating malnutrition related disorders and promoting sustainable diet plan for the healthy life • The learner can feel responsibility, and solidarity for and with people suffering from malnutrition.
Behavioural Teaching & learning objectives	<ul style="list-style-type: none"> • The learner can evaluate and implement actions personally to combat malnutrition and to promote healthy life style.. • The learner can evaluate, participate in and influence decision-making related to required dietary allowance for the malnutrition and the promotion of sustainable human growth and Development. • The learner can take on active role as an global citizen in the challenge of malnourishments. • The learner can change their Diet plan and practices in malnourish peoples in order to contribute to the combat against hunger and the promotion of sustainable Diet plan.

Examples of learning approaches and methods for SDG 2 “Zero Hunger”

Perform role-plays with complete nutrition.

Carry out scenario development and analysis of different diet plan.

Carry out case study analyses of adequate and non-adequate nutrition in different age groups.

Follow food from farm to fork – growing, harvesting and preparing food, e.g.

Engage students in efforts to connect leftover food with people in need Conduct a Life

Suggested topics for SDG 2 “Zero Hunger”

Definition of the concept of hunger and malnutrition

Groups that are particularly vulnerable to malnutrition

Main drivers and root causes of hunger and malnutrition, including the relation between climate change and food security and the depletion of soil quality

Consequences of hunger and malnutrition on the health and well-being of people,

Physical, emotional and socio-cultural functions of food Hunger in relation to

food abundance, obesity and food waste

Global food – import, export, cash crops, international taxes, subsidies, trading systems, merits, risks and challenges of malnourishment.

Institutions and movements related to malnourishment and their effects on human growth.

Concepts and principles of sustainable diet plan for all age groups.

Diversity of different diet with ethnicity.

TEACHING & LEARNING OBJECTIVES FOR SDG 2 NANOSCIENCE & TECHNOLOGY

Agriculture is one of the most important sectors as it produces and provides raw materials for food and feed industries. The foremost universal challenge on our planet is the question of establishing food security for a rapidly increasing population in the world. Predictions show that food demand is likely to rise from 59 to 98% for the world population reaching 9 billion by 2050. Despite an increase of the world population particularly in developing countries, the global food supply interrupted by the expenditure of bio-resources for production of energy, manufacturing chemicals, high post farming loss, less value addition, inefficient distribution and marketing systems, and other factors. Farmers throughout the world have their sights set on enhancing the production of crops through intensive and extensive agriculture. Newer technology that will increase the production and reduce food wastage to maintain sustainable living standards of the nation and improve food security. Therefore, sustainable agricultural strengthening the practical opportunity to get rid of poverty and hunger around the globe.

Agricultural efficiency, soil improvement, secure water use, distribution of food in stores, and its quality are basic factors of securing food that may be improved via advances in nanotechnology research. In the present century, there is a big demand for fast, reliable, and low-cost systems for the detection, monitoring, and diagnosis for biological host molecules in agricultural sectors. Nanotechnology is one of the promising areas to boost the availability of food and to manufacture newer products for beneficial purposes in agriculture, food, water, the environment, medicine, energy, and electronics. It is a developing and quickly growing region with new and exclusive applications in agriculture and food research. Growing productivity and declining postharvest expenditure via better outcomes with the support of newer technical investigations with the help of nanotechnology and biotechnology in food stuffs might be the best answer.

Few evolving areas regarding nanomaterials in agriculture are to reduce the number of spread chemicals, minimize nutrient losses in fertilization, and increased yield through pest and nutrient management. Some of the emerging topics of nanotechnology for food can be largely improved in the aspects of smart delivery of nutrients, bio separation of proteins, rapid sampling of biological and chemical contaminants, nano-encapsulation of nutraceuticals, solubilisation and delivery. Nanotechnology-based applications have put forward the growing requirement of using nanoparticle in food biotechnology, science, food processing, food packaging, functional food development, food safety, detection of pathogens in food, and extended shelf-life of food. The nanotechnology can take an important part in the productivity through control of nutrients as well as it can also participate in the monitoring of water quality and pesticides for sustainable development of agriculture.

The implication of nanotechnology research in the agricultural sector has become a key factor for the sustainable developments. In the agri-food areas pertinent applications of nanotubes, fullerenes, biosensors, controlled delivery systems, nano-filtration are becoming popular. Such technology offers good resource management, drug delivery mechanisms in plants and helps to maintain the soils fertility.

The new and future technology is nanotechnology that possesses very unique property in food supply chain (from the field to table: crop production, use of agro-chemicals such as nano-fertilizers, nano-pesticides, nano-herbicides, precision farming techniques, intelligent feed, enhancement of food

texture and quality, and bioavailability/nutrient values, packaging and labelling) round the world agricultural sector. In spite of being relatively advantageous in agriculture process, still developing countries are suffering from lack of high importance of food products.

With nanotechnology the goal of “Zero Hunger” can be reached in the near coming future. All that is required is an in-depth interdisciplinary approach to solving world hunger through international cooperation for regulation and legislation for exploitation of this technology.

<p>Cognitive Teaching & learning objectives</p>	<ul style="list-style-type: none"> • The learner knows about hunger and malnutrition and their main physical and psychological effects on human life, and about specific vulnerable groups. • The learner knows about the current global situation when it comes to world hunger. • The learner knows the main drivers and root causes for hunger at the individual, local, national and global level • The learner knows about the conventional methods in currently being used to reduce world hunger. • The learner gets to understand how nanotechnology is being used to reduce hunger through agriculture • The learner understands how nanomaterials can be used to improve crop yield, soil remediation, disease control. • The learner understands the possible toxic effects of nanoparticles in the environment and the need for regulations in its use.
<p>Socio-emotional Teaching & learning objectives</p>	<ul style="list-style-type: none"> • The learner can communicate on the issues and connections between combating hunger and promoting sustainable agriculture and improved nutrition. • The learner can create a vision without world hunger through the use of different nanomaterials • The learner can reflect on their own values and deal with diverging values, attitudes, and strategies on the use of nanotechnology when it comes to developing a sustainable living through agriculture

TEACHING & LEARNING OBJECTIVES FOR SDG 2

DIVISION OF COGNITIVE NEUROSCIENCE AND PSYCHOLOGY

Subject/ topic/ course in regular curriculum relating to SDG 2	<ul style="list-style-type: none"> • Nutrition and Health Psycholgy <ul style="list-style-type: none"> • Nutritional needs for growth, development and life development. • Dietary approaches in Mental Health • Explores the bi-directional impact of nutrition on brain functions. • Dietary challenges and intervention effects on mental illness.
Cognitive Teaching & learning objectives	<ul style="list-style-type: none"> • The learner knows about hunger and malnutrition and their main physical and psychological effects on human life, and about specific vulnerable groups. • The learner knows about the amount and distribution of hunger and malnutrition locally, nationally and globally, currently as well as historically. • The learner knows the main drivers and root causes for hunger at the individual, local, national and global level. • The learner understands the need for sustainable agriculture to combat hunger and malnutrition worldwide and knows about other strategies to combat hunger, malnutrition and poor diets
Socio-emotional Teaching & learning objectives	<ul style="list-style-type: none"> • The learner can communicate on the issues and connections between combating hunger and promoting sustainable agriculture and improved nutrition. • The learner can create a vision for a world without hunger and malnutrition. • The learner can reflect on their own values and deal with diverging values, attitudes, and strategies in relation to combating hunger and malnutrition and promoting sustainable agriculture. • The learner can feel empathy, responsibility, and solidarity for and with people suffering from hunger and malnutrition.
Behavioural Teaching & learning objectives	<ul style="list-style-type: none"> • The learner can evaluate and implement actions personally to combat hunger and to promote sustainable agriculture. • The learner can evaluate, participate in and influence decision-making related to hunger and malnutrition and the promotion of sustainable agriculture. • The learner can take on critically their role as an active global citizen in the challenge of combating hunger. • The learner can change their production and consumption practices in order to contribute to the combat against hunger and the promotion of sustainable agriculture.

Suggested topics for SDG 2 “Zero Hunger”

Definition of the concept of hunger and malnutrition

Groups that are particularly vulnerable to hunger and malnutrition

Main drivers and root causes of hunger and malnutrition, including the relation between climate change and food security and the depletion of soil quality

Consequences of hunger and malnutrition on the health and well-being of people, including practices like migration as adaptation

Physical, emotional and socio-cultural functions of food Hunger in relation to food abundance, obesity and food waste

Global food – import, export, cash crops, international taxes, subsidies, trading systems, merits, risks and challenges of utilising genetically modified organisms

Institutions and movements related to hunger and sustainable agriculture like the UN’s Food and Agriculture Organization (FAO), Foodwatch, Slow Food, community-based agriculture, the international movement Via Campesina, etc.

Concepts and principles of sustainable agriculture, including climate-resilient practices, organic farming, biodynamic farming, permaculture and agro-forestry

Biodiversity of seeds, plants and animals, particularly in relation to wild species

Examples of learning approaches and methods for SDG 2 “Zero Hunger”

Perform role-plays with small-scale producers versus big enterprises in a global market

Carry out scenario development and analysis of local or national food production and consumption systems and/or about the impact of natural hazards and disasters in the food production systems

Carry out case study analyses of adequate and non-adequate public policies or management strategies of enterprises to combat hunger, reduce food waste and promote sustainable agriculture

Organize excursions and field trips to places where sustainable agriculture is practiced

Follow food from farm to fork – growing, harvesting and preparing food, e.g. in urban or school gardening projects

Engage students in efforts to connect leftover food with people in need Conduct a Life

TEACHING & LEARNING OBJECTIVES FOR SDG 2 DIVISION OF MEDICAL PHYSICS

Subject/ topic/ course in regular curriculum relating to SDG 2	<ul style="list-style-type: none"> Anatomy and Physiology
Cognitive Teaching & learning objectives	<ul style="list-style-type: none"> Describe the causes, clinical features, prevention, and control of nutritional health problems.
Socio-emotional Teaching & learning objectives	<ul style="list-style-type: none"> Can reflect on nutritional status, causes and consequences of under-nutrition based on patient and community interaction. Can feel affinity, responsibility and solidarity for and with people suffering from the disease.
Behavioural Teaching & learning objectives	<ul style="list-style-type: none"> Conduct health education sessions at community setting on causes, consequences and prevention of the disease.

Suggested topics for SDG 2 “Zero Hunger”

- Head & neck, breast, gynecological, gastro intestinal tract, genitourinary, lung and thorax lymphomas and leukemias and other cancers including AIDS and related cancer
- The above mentioned cancers can be treated by providing nutritious food
- And educating about healthy diet, obesity.

Examples of learning approaches and methods for SDG 2 “Zero Hunger”

- Perform role-plays by the concept of quit smoking,, tobacco consumption and alcohol addiction
- Carry out scenario development and analysis of local or national food production and consumption systems which leads in preventing of cancer disease
- Carry out case study analyses of adequate and non-adequate public policies or management strategies for prevention of cancer
- Organize excursions and field trips to places where cancer patients with poor diet and malnutrition can be helped by providing beneficiary diet plans

TEACHING & LEARNING OBJECTIVES FOR SDG 2

DIVISION OF MEDICAL STATISTICS

Subject/ topic/ course in regular curriculum relating to SDG 2	<ul style="list-style-type: none"> Population and Health Data Management
Cognitive Teaching & learning objectives	<ul style="list-style-type: none"> The learner knows about malnutrition by knowing the body mass index (BMI), which is defined as the weight in kilograms divided by the square of the height in meters. The learner knows agricultural factor income measures the income generated by farming, which is used to remunerate borrowed or rented factors of production (capital, wages, and land rents) as well as own production factors (own labor, capital, and land). The learner knows the demographic features and measures of population. The learner understands the need for sustainable agriculture to combat hunger and malnutrition worldwide and knows about other strategies to combat hunger, malnutrition, and poor diets. The learners understand the concept of vital statistics which includes birth and death rate, mortality, and morbidity and so on. The learners understand the importance of family planning programs.
Socio-emotional Teaching & learning objectives	<ul style="list-style-type: none"> The learner can communicate on the issues and connections between combating hunger and promoting sustainable agriculture and improved nutrition by knowing demographic features of population at local and global level. The learners Learn basic measures of Mortality, Fertility and Population Growth. The learner Understand the different population growth models. The learner can feel empathy, responsibility, and solidarity for and with people suffering from hunger and malnutrition.
Behavioural Teaching & learning objectives	<ul style="list-style-type: none"> The learner can Gain of theoretical and analytical Concept of Life Tables, their construction and uses. The learner can evaluate, participate in and influence decision-making related to hunger and malnutrition and the promotion of sustainable agriculture. To Learners can construct Life tables and estimate the National Income using different approaches.

Suggested topics for SDG 2 “Zero Hunger”

- ✓ Introduction to demographic data: Census, vital events, registration, survey
- ✓ Application of Demography, Static Demography, Dynamic Demography, Collection of Demographic Data,
- ✓ Measures of population, Growth of population, Population Density, population distribution by age and Sex in India.
- ✓ Models for population growth: exponential, logistic, Gompertz models, Deterministic models,
- ✓ Birth and death processes, logistic growth, Competition between populations, growth rate, stable population analysis, population projection by component method and using Leslie matrix.
- ✓ Basic concept of Vital Statistics, Uses and Advantages of Vital Statistics, Application, Measures of Vital Statistics, Measures of fertility, Fertility rates, Reproduction rate, Measures of Marital Status, Measures of Morbidity, Measures of Mortality, Crude Death rate, Standardized death rates, Specific Death rates,
- ✓ Monitoring of Family Planning Program.
- ✓ Population projection using logistic curve.
- ✓ Basic concept of National income – GNP, GDP.
- ✓ Methods of estimating National income, CSO, NSSO and Its activities, National accounts statistics of CSO, Measuring inequality of incomes, Gini coefficient.

Examples of learning approaches and methods for SDG 2 “Zero Hunger”

- ✓ To carry out seminars related to impact zero hunger.
- ✓ Gain of theoretical and analytical Concept of Life Tables, their construction and uses.
- ✓ Learn basic measures of Mortality, Fertility and Population Growth.
- ✓ The learner Understand the different population growth models.
- ✓ Case studies related to Zero hunger.

TEACHING & LEARNING OBJECTIVES FOR SDG 2

DIVISION OF GEOINFORMATICS

Subject/ topic/ course in regular curriculum relating to SDG 1	<ul style="list-style-type: none"> • Climate Change and Food Security using GIS • Natural Resource Management and Sustainable development • Remote Sensing Application in Agriculture. • Land Use and Land Cover mapping- landutilization
Cognitive Teaching & learning objectives	<p>At the end of 2nd year the learner should be able to</p> <ol style="list-style-type: none"> 1. understand the spatial-temporal distribution of food grains and specific vulnerable groups. 2. Analysis of geospatial solutions to food insecurity, malnutrition, and climate change can be sustainably scaled to reach the most vulnerable in our food systems. 3. To understand the use of GIS in addressing food shortages, improving harvests, and tackling malnutrition. 4. To enable the farmer to map and project current and future fluctuations
Socio-emotional Teaching & learning objectives	<p>At the end of final year the student should be able to</p> <ol style="list-style-type: none"> 1. The learner can use an effective application of GIS and remote Sensing to maximize agricultural yields through precision farming and the accurate targeting of irrigation and fertilization, as well as monitoring crop health. 2. The learner can create a decision support system for food security by performing a site suitability analysis for agriculture. 3. Learners can perform accurate mapping of geographic and geologic features of farmlands enabling scientists and farmers to create more effective and efficient farming techniques.
Behavioural Teaching & learning objectives	<p>At the end of the program the learner should be able to</p> <ol style="list-style-type: none"> 1. The learner can evaluate and implement actions personally to combat hunger and promote sustainable agriculture using GIS. 2. The learner can evaluate, participate in and influence decision-making related to hunger and malnutrition and the promotion of sustainable agriculture. 3. The learner can take on critically their role as an active global citizen in the challenge of combating hunger. 4. The learner can change study production and consumption

Suggested topics for SDG 2 “Zero Hunger.”

1. Geospatial solutions to food insecurity, malnutrition, and climate change can be sustainably scaled to reach the most vulnerable in our food systems.
2. Food Security Assessment Based on GIS Spatial Analysis
3. Availability of food in local environments
4. Effects of climate change on agriculture and resources
5. The active planning, development, and management of food production on existing lands
6. Information and Early Warning System on Food and Agriculture
7. Monitoring major food crop conditions to assess future production.
8. Agricultural Geographic Information Systems using Geomatics Technology.
9. Enable the farmers to map and project current and future fluctuations in precipitation, temperature, crop output etc.

Examples of learning approaches and methods for SDG 2 “Zero Hunger.”

1. Use of GIS in the assessment of the nutritional status of vulnerable society and to find out hotspot areas.
2. Carry out scenario development and analysis of local or national food production and consumption systems and/or about the impact of natural hazards and disasters on the food production systems
3. Carry out case study analyses of adequate and non-adequate public policies or management strategies of enterprises to combat hunger, reduce food waste and promote sustainable agriculture
4. Case studies, poster competition, essay writing on the causes, consequences and
5. impact of hunger and malnutrition

TEACHING & LEARNING OBJECTIVES FOR SDG 2

DEPARTMENT OF YOGA

Subject/ topic/ course in regular curriculum relating to SDG 2	<ul style="list-style-type: none"> • The Course MSc in Yoga • Human Nutrition & Yoga ; Yoga & Food science; Fundamental of Yoga, • Human Nutrition & Yoga is the key point for the SDG 2 'End hunger, achieve food security and improved nutrition and promote sustainable agriculture' and is an essential component for achieving many of the other targets. • The course content is in alignment to the the SDGs aiming to promote healthy and sustainable diets and ensure food security globally.
Cognitive Teaching & learning objectives	<p>At the end of 1st year the learner should be able to,</p> <ul style="list-style-type: none"> • Know about interrelationship between Yoga, food, nutrition and health, and in disease conditions. • Classify food and describe the nutrient values of each type of foods • Know role of nutraceutical on health & disease. <p>At the end of 2nd year and course the learner should be able to,</p> <ul style="list-style-type: none"> • understand the need of quality of vegetables & fruits for proper production & supply of food to maintain health and thereby sustainable agriculture to be implemented to combat hunger and malnutrition and knows about other strategies of Yogic diet plan. • The learner can propose research proposals in the area of Yoga, Yogic diet & nutrition & plans to overcome hunger or any health ailments. • The learner understands importance of reducing food wastage which can contribute greatly to achieving Zero Hunger SDG goal. • Describe the causes, clinical features, prevention, and control of nutritional health problems.
Socio-emotional Teaching & learning objectives	<p>At the end of 2nd year and course the learner should be able to,</p> <ul style="list-style-type: none"> • The learner can educate and create awareness on sustainable promote organic & kitchen farming at home or educational institutions. • The learner can reflect on their own values and deal with diverging values, attitudes, and strategies in relation to combating hunger.
Behavioural Teaching & learning objectives	<ul style="list-style-type: none"> • The learner can evaluate and plan actions following various standard guidelines to combat hunger and malnutrition among all. • The learner can participate in decision-making or framing policies for reducing to hunger and malnutrition and the promotion of sustainable health practices. • The learner can take on critically their role as an active professional in the challenge of combating hunger and reduce the stress in society through Yoga. <p>At the end of 2nd year and course the learner should be able to,</p> <ul style="list-style-type: none"> • The learner can effectively implement the positive impact of Yoga & nutrition research work to manage any health related problem • The learner can creating awareness on Yoga & balanced food for health and disease conditions. • The learner will understand his/her role as Yoga health professional to educate the target group in achieving Zero hunger goal.

Suggested topics for SDG 2 “Zero Hunger”

- The interrelation of poverty, natural hazards, climate change and other economic, social and environmental shocks and stresses – Yoga as a stress management programme.
- Yoga awareness program, to manage and maintain health during extreme conditions like natural calamities, pandemic/endemic situations.
- Consequences of poverty such as stress & psychological ailments & its management through yoga.

BSC Yoga

Subject/ topic/ course in regular curriculum relating to SDG -2	Basics of Bio chemistry/ Nutrition & Dietetics and Concept of Yogic diet/ Nutrition and Sports & Fitness
Cognitive Teaching & learning objectives	At the end of final Professional year the learner should be able to, <ul style="list-style-type: none"> • Know about interrelationship between Yoga, food, nutrition and health, and in disease conditions. • Classify food and describe the nutrient values of each type of foods
Socio-emotional Teaching & learning objectives	At the end of final year the learner should be able to <ul style="list-style-type: none"> • The learner can reflect on their own values and deal with diverging values, attitudes, and strategies in relation to combating hunger.

Suggested topics for SDG2 “Zero Hunger”

- Role of micro and macro-nutrients in maintaining health
- Concept of hunger
- Nutritional assessment of vulnerable people , visiting the health care establishments and nutritional counselling.
- Community Nutrition programs, policies, legislations, and strategies

Examples of learning approaches and methods for SDG2 “Zero Hunger”

- Educating & awareness programs on reducing food wastage such as food distribution, reaching the unreached population.
- Creating awareness on Yoga and balanced food intake for health and disease conditions