



Integration of SDGs and Sustainability in Undergraduate Programs (BSPH & BS Nutrition)

Institutional Commitment to the SDGs

The School of Public Health (SPH) at Dow University of Health Sciences is committed to advancing the **United Nations Sustainable Development Goals (SDGs)** through its academic programs, research, and community engagement. The **Bachelor of Science in Public Health (BSPH)** and **Bachelor of Science in Nutrition** programs have been purposefully designed to align education, research, and practice with the principles of sustainability, equity, and global health.

Our programs integrate the SDGs not only through individual course content but also through overarching Program Learning Outcomes (PLOs) that emphasize community engagement, sustainable health systems, ethical leadership, and evidence-based practice.

1. Integration of SDGs in the BSPH Curriculum

The **Bachelor of Science in Public Health (BSPH)** program explicitly embeds sustainability and SDG principles in its design, focusing on improving population health, reducing inequities, and promoting resilient systems.

BSPH Program Learning Outcomes (PLOs) and SDG Integration

The BSPH PLOs are designed to:

- Promote health equity and sustainability (SDG 3, 10, 13)
- Strengthen community engagement and advocacy (SDG 11, 17)
- Develop research and policy analysis skills for sustainable interventions (SDG 9, 16)
- Encourage ethical and global perspectives on health and environment (SDG 4, 3)

Key Courses and SDG Linkages

Course Title	Relevant SDGs / Sustainability Focus
BSPH 403: Primary Health Care	SDG 3 – Promotes equitable access to health services and preventive care.
BSPH 410: Reproductive Health	SDG 3 & SDG 5 – Advances maternal and reproductive health, promoting gender equality.
BSPH 408: Health Promotion, Advocacy, and Social Mobilization	SDG 3 & SDG 10 – Strengthens community capacity for sustainable behavior change and equity.
BSPH 402: International Health	SDG 16 – Strengthens global partnerships, peace, and institutional resilience.
BN 607: Policy & Program in Public Health Nutrition	SDG 2 & SDG 17 – Builds capacity for multi-sectoral policy planning and collaboration.
BN 609: Introduction to Environmental Health	SDG 6, 11, 13 – Promotes environmental sustainability and climate resilience.
BSPH 605: Disaster Management	SDG 11 & 13 – Strengthens preparedness for climate-related and humanitarian challenges.
BSPH 501: Mental Health	SDG 3 – Promotes psychological well-being and mental health equity.
BSPH 505: Community Pediatrics	SDG 3 & 5 – Focuses on early childhood health and gender-equitable family care.
BSPH 602: Research Project / BSPH 608: Field Internship	SDG 3, 11 & 17 – Applies theory through community-based SDG implementation projects.

Thus, the BSPH program represents a dedicated, sustainability-oriented degree that operationalizes SDGs **2, 3, 4, 5, 6, 10, 11, 13, 16, and 17** through coursework, practice, and research.

2. Integration of SDGs in the BS Nutrition Curriculum

The **Bachelor of Science in Nutrition** program addresses sustainability through the promotion of food security, public health nutrition, and sustainable dietary practices. The curriculum builds competencies in clinical, community, and policy domains aligned with the **2030 SDG Agenda**.

Program Learning Outcomes (PLOs) and SDG Alignment

BS Nutrition PLOs	Aligned SDGs
1. Translate and integrate nutrition and dietetics science into clinical and community settings.	SDG 2 (Zero Hunger), SDG 3 (Good Health and Wellbeing)
2. Conduct nutrition research using appropriate indicators and methods.	SDG 3 (Good Health and Wellbeing), SDG 9 (Industry, Innovation & Infrastructure)
3. Conduct timely and appropriate nutritional assessment.	SDG 2, SDG 3
4. Develop effective counseling and communication skills.	SDG 4 (Quality Education), SDG 17 (Partnerships for the Goals)
5. Perform activities related to program planning, policy, and health systems.	SDG 2, SDG 3, SDG 10 (Reduced Inequalities), SDG 17

Course-Level SDG Integration

Course Title	Relevant SDGs / Sustainability Focus
Introduction to Food & Nutrition, Macronutrients & Micronutrients, Nutrition & Disease, Nutrition During Lifecycle	SDG 2 & 3 – Address malnutrition and promote healthy diets.
Community Nutrition, Nutritional Problems in Developing Countries, Policy & Program in Public Health Nutrition	SDG 1, 2, 3, 10 – Promote equitable access to nutrition and reduce inequalities.
Food Safety & Sanitation, Food Toxicology, Food Safety & Quality Assurance	SDG 3, 6, 12 – Promote safe and sustainable food systems.
Utilization of Food Industry Waste, Food Product Development	SDG 9, 12, 13 – Support innovation and sustainable production.
Introduction to Environmental Health	SDG 6, 13, 15 – Link environmental sustainability to health outcomes.
Principles of Health Management, Entrepreneurship	SDG 8, 12 – Build leadership and sustainable management skills.
Internship / Capstone Project	SDG 3, 9, 17 – Apply sustainable solutions through field practice and research.

Pedagogical and Institutional Integration

- Incorporation of community-based learning and health promotion activities on food security and maternal-child health.
- Emphasis on ethical, evidence-based, and environmentally responsible professional practice.
- Interdisciplinary collaboration with public health, environment, and management sciences to reinforce SDG linkages.

The **BS Nutrition program** is therefore a dedicated sustainability-oriented degree, addressing SDGs **2, 3, 4, 6, 9, 10, 12, 13, and 17** through its curriculum, research, and field engagement.

3. Conclusion

Both **BSPH** and **BS Nutrition** programs at the School of Public Health, DUHS, serve as flagship undergraduate degrees aligned with the Sustainable Development Goals.

Through integrated learning, applied research, and community service, these programs contribute to achieving a sustainable, equitable, and health-promoting future for Pakistan and beyond.

CURRICULUM OF BACHELOR OF SCIENCE IN NUTRITION & FOOD

SCIENCE

2023- 2024

PREAMBLE:

International ranking based on health indicators places Pakistan at the lowest rungs of the ladder with persistently high mortality. The two most important contributing factors are related to low socio-economic status and poor nutritional status. Pakistan is faced with a major problem of malnutrition at all stages of life and its relationship with the disease process. Awareness about the importance of nutrition among our general public and even among health care providers is not enough to promote healthy eating habits to promote good nutrition. The challenges facing food and nutrition professionals today range from problems of undernutrition, food insecurity, and nutritional deficiencies to those of obesity and chronic diseases. Keeping all these factors in mind the School of Public Health at Dow University of Health Sciences offers a degree in BS Nutrition & Food Science to train graduates with proper and recent knowledge of nutrition and its application in daily life.

GOAL:

To provide students with a didactic program that covers the breadth of knowledge in nutrition, from molecules to organisms, populations and food chemistry; provides research opportunities; and offers practical experiences in industries and training in public health nutrition, clinical dietetics, and food science.

OBJECTIVES:

- To enable the graduate to apply fundamentals of human nutrition, clinical dietetics, food science and public health nutrition concepts effectively and efficiently.
- To equip students with effective counseling, practical field experience, and communication skills to implement successfully in the clinical, food science, and public health settings.
- To provide students with a professional learning experience that instills a sense of professional ethics in their discipline.
- To equip students with research and analytical reasoning skills to conduct food and nutrition research
- An explicit goal of the program is to connect the core knowledge with real-life situations that is community-based, industry-based, and or clinical-based nutritional management
- To impart effective leadership and efficient management qualities by providing opportunities to present and take lead on relevant projects.

DEGREE PROGRAM:

A four-year program called **Bachelor of Science in Nutrition & Food Science** focuses primarily on the various aspects of nutrition & food science in a clinical, public health, and food industry environment. This comprehensive interdisciplinary program will blend basic sciences with food, nutrition, and human health. This program is going to offer major tracks: The Clinical Dietetic, the Public Health Nutrition & Food Science Track.

Clinical Dietetic Track: Students who wish to pursue the field of nutritional sciences in a clinical setting, where their primary responsibility may be to recommend, plan, and deliver nutrition interventions and nutrition therapy to patients. In addition, these students may also be

equipped to work and manage food service systems /organizations in health care faculties. Once they have completed their academic course work and a supervised dietetic internship, the students can apply for the registered dietitian (RD) credentials by the Pakistan Nutrition & Dietetic Society after passing their registration exams. Those following this track will also be qualified to work in educational and research institutions and in private practice as consultants to individuals, corporations, medical care groups and long term care facilities.

Public Health Nutrition Track: Prepares students in the field of nutritional sciences with a focus on the promotion of good health through nutrition and the primary prevention of nutrition-related illness at the population level. This program will also equip the students to work with the various national and international health-related organizations to develop policies related to nutrition. This program will further train the graduates to develop ideas and identify practical solutions to public health problems at a national and regional level.

Food Science Track: This track will prepare students with the essential aspects of food science, including food chemistry, microbiology, processing, safety, and technology. The aim is to provide students with both theoretical knowledge and practical skills necessary for a career in the food industry or further academic research.

CAREER OPPORTUNITIES:

Nutrition is now a well-recognized health science that has gained recent momentum nationally, regionally and internationally. For Pakistan it is still in the developing stage, more so for Sind region. Graduates of this program will be in great demand in public health sector, NGOs, health care institutions, food industry, pharmaceutical companies, health organizations, hospitals & clinics, schools, academia, research institutes or can pursue further studies in nutrition or any other health related fields.

FACILITIES AVAILABLE AT SPH

- Master and PhD faculty members from various backgrounds
- Guest Lecture Series and Seminars
- Dedicated Digital Library/ Computer Lab with a capacity to accommodate 40 students
- Auditorium/Seminar Room
- Food Science Laboratory custom-built for Food and Nutritional sciences
- Clinical Science Lab equipment
- Office of Student Affairs (OSA) which deals with the student related queries and provide their solution

BS NUTRITION & FOOD SCIENCE AT SCHOOL OF PUBLIC HEALTH

Eligibility	<ul style="list-style-type: none">• Matric / O level / equivalent examination certificate.• Intermediate Science / ‘A’ Level / equivalent examination minimum marks of 60% aggregate in intermediate Science (Pre-medical) / ‘A’ Level / equivalent examination.• Candidate’s domicile certificate of Sindh.
<ul style="list-style-type: none">• Entrance Test:	<ul style="list-style-type: none">• Structure Best Choice Questions (BCQs)• Interview by the selection board

EXAMINATION / EVALUATION SYSTEM:

The curriculum has been designed for the semester system of examination. 70% final Exam based on BCQs/SAQs and 30% internal evaluation. Further details on evaluation & examination will be described for individual courses as part of the syllabus.

For the final (8th Semester) evaluation and examination will be conducted by the SPH through internal & external examiners. The details of the grading criteria will be submitted to the examination department as a separate document.

EXPENSES/ FEE STRUCTURE:

The costs of the nutrition degree include the usual tuition, books and other fees as per the DUHS undergraduate degree policies and procedures.

***Fee structure is subject to change**

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Policy Document
Overview of BS Nutrition & Food Science
Program Curriculum
2023-2024

This policy document to be used for students enrolled in 2023 onwards (batch 9)

Year I Semester I

Course Codes	Course Title	Credits	Category
BN102	Islamic Studies/Ethics	2	Islamic Studies
BN303	Introduction to Food & Nutrition	3	Major Course
BN307	Introduction to Social Sciences	2	Social Sciences
BSPH 305	Basic computer skills/ICT	3	Application of information & Communication Technologies (ICT)
ENG300	English I (Functional English)	3	Functional English
BN101	Pak Studies	2	Ideology and constitution of Pakistan
	Total Credits	15	

Year I Semester II

Course Codes	Course Title	Credits	Category
BN306	Macro & Micronutrients	3	Major Course
BN409	Analytical Skills / Mathematics	3	Quantitative Reasoning
BN505	Introductory Statistics	3	Quantitative Reasoning
BN310	Introduction to Philosophy	2	Arts & Humanities
ENG301	English II (Communicational Skills)	3	Expository Writing
BSPH408	Health promotion, advocacy, and social mobilization	2	(Civics and community engagement)
	Total Credits	16	

Year II Semester III

Course Codes	Course Title	Credits	Category
BN401	Nutrition and Human Metabolism (Macronutrients)	3	Major Course
BN507	Principles of Health Management	3	Entrepreneurship
BN304	Microbiology	3	Major Course
BN410	Health Economics	3	Allied Course
BN302	Biochemistry	3 (2+1)	Natural Sciences
	Total Credits	16	

Year II Semester IV

Course Codes	Course Title	Credits	Category
BN414	Meal Planning	3	Major Course
BN408	Introduction to Research	3	Major Course
BN402	Nutrition and Human Metabolism (Micronutrients)	3	Major Course
BN403	Introduction to Food Science	3	Major Course
BN504	Food Safety & Sanitation	3	Major Course
BN404	Nutrition During Lifecycle	3	Major Course
	Total Credits	18	

Year III Semester V

Course Codes	Course Title	Credits	
BN501	Nutrition & Disease	3	Major Course
BN503	Nutritional Assessment	3	Major Course
BN504	Food Service & Institution Management	3	Major Course
BN511	Food Chemistry	3	Major Course
BN513	Food Biotechnology	3	Major Course
BN413	Community Nutrition	3	Major Course
	Total Credits	18	

Year III Semester VI

Course Codes	Course Title	Credits	
BN502	Practical Skills in Nutrition Counseling	3	Major Course
BN611	Nutrition Care Process in Clinical Nutrition	3	Major Course
BN512	Food Toxicology	3	Major Course
BN510	Nutrigenomics	3	Allied Course
BN514	Industrial Economics & Management	3	Major Course
	Total Credits	15	

Year IV Semester VII & VIII

PUBLIC HEALTH NUTRITION TRACK				
Semester VII	Course Codes	Course Title	Credits	
	BN601	Fundamentals of Public Health	3	Major Course
	BN605	Nutritional Problems in Developing Countries	3	Major Course
	BN607	Policy & program in Public Health Nutrition	3	Major Course
	BN609	Introduction to Environmental Health	3	Major Course
	BN606	Introduction to Epidemiology	3	Allied Course
		Total Credits	15	
Semester VIII	Course Codes	Course Title	Credits	
	BN602	Practicum in Public Health organization.	3	Internship
	BN612	Health & Fitness	3	Allied Course
	BN614	Nutrition in Health Care System:	3	Major Course
	BN616	Principles and Programs in Maternal and Child Health	3	Major Course
	BN618	Capstone Project	3	Capstone
		Total Credits	15	

CLINICAL DIETETICS TRACK				
Semester VII	Course Codes	Course Title	Credits	
	BN613	Clinical Nutrition I	3	Major Course
	BN613	Clinical Nutrition II	3	Major Course
	BN615	Nutrition & Diet Therapy Across Life cycle	3	Major Course
	BN617	Drug & Nutrient Interaction	3	Major Course
	BN606	Introduction to Epidemiology	3	Allied Course
		Total Credits	15	
Semester VIII	Course Codes	Course Title	Credits	
	BN610	Dietetic Internship in Hospital Setting	3	Internship
	BN612	Health & Fitness	3	Allied Course
	BN620	Enteral & Parenteral Nutrition Support	3	Major Course
	BN622	Nutraceuticals & Functional Foods	3	Major Course
	BN618	Capstone Project	3	Capstone
		Total Credits	15	
		Total Credits		

FOOD SCIENCE TRACK				
Semester VII	Course Codes	Course Title	Credits	
	BN619	Industrial methods of food preservation	3	Major Course
	BN621	Food Additives	3	Major Course
	BN623	Food Safety & Quality Assurance	3	Major Course
	BN625	Utilization of Food Industry Waste	3	Major Course
	BN606	Introduction to Epidemiology	3	Allied Course
		Total Credits	15	
Semester VIII	Course Codes	Course Title	Credits	
	BN610	Internship at F&B organization	3	Internship
	BN612	Health & Fitness	3	Allied Course
	BN624	Food Product Development	3	Major Course
	BN626	Industrial Methods in Food Analysis	3	Major
	BN618	Capstone Project	3	
		Total Credits	15	
		Total Credits		

Sr. No.	General Education Courses Proposed in New Policy UEP (V.1.1)	New Policy Courses	Credit Hours of the Course(s)	Implemented for BS Nutrition
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1	ARTS & Humanities	1 course	(2 cr. Hours)	yes
2	Natural Sciences	1 course	(2 cr. Hours) (2+1)	yes
3	Social Sciences	1 course	(2 cr. Hours)	yes
4	Functional English	1 course	(3 cr. Hours)	yes
5	Expository Writing	1 course	(3 cr. Hours)	yes
6	Quantitative Reasoning	2 courses	(6 cr. Hours) (3+3)	yes
7	Islamic Studies OR Religious Education/ Ethics for non Muslim Students	1 course (2 cr. Hours)	(2 cr. Hours)	yes
8	Ideology and Constitution of Pakistan	1 course (2 cr. Hours)	(2 cr. Hours)	yes
9	Appplication of Information and Communication Technologies (ICT)	1 Course	3 cr. Hours (2+1)	yes
10	Entrepreneurship	1 course (2 cr. Hours); <i>Mandatory course title, where HEC has designated it a model course</i>	(2 cr. Hours)	yes
11	Civics and Community Engagement	1 course (2 cr. Hours)	(2 cr. Hours)	yes
	Total Courses and Cr. Hours in the V.1.1 Version of the HEC's Undergraduate Education Policy 2023	12 courses	30 Credit Hours	yes
	Previously Approved Undergraduate Education Policy of HEC	13 courses	39 Cr. Hours	

<u>Category</u>	<u>No. Courses</u>	<u>Credits</u>
Major -	25	75
Allied -	04	12
GEP-	12	30

Total credit hours 128