

FAR WESTERN UNIVERSITY
NEPAL



CURRICULUM

BACHELOR OF PUBLIC HEALTH

August 2023

SECTION A: GENERAL INFORMATION

1. BRIEF HISTORY OF THE UNIVERSITY

Far Western University (FWU) stands as a government-funded academic institution, its inception rooted in parliamentary legislation enacted in the year 2010. The institution's principal mandate is to deliver education of exceptional quality within one of the nation's most remote regions. FWU is committed to tailoring its curriculum to align with contemporary educational requisites, both on a national and international scale. Over the course of its existence, FWU has consistently offered a diverse array of programs spanning several faculties, including Agriculture, Art and Humanities, Education, Engineering, Law, Management, and Science. Recognizing a pronounced inadequacy in the provision of healthcare and medical services within this region, FWU has embarked on a visionary endeavor—the establishment of a Faculty of Health Sciences. To fulfill this noble mission, a tripartite agreement of significance was successfully ratified on January 24, 2022. This pivotal agreement brought together FWU, the Ministry of Health and Population, and the Ministry of Education, Science, and Technology in unison. As a consequential outcome of this collaborative effort, Dadeldhura Medical College (DMC) has now been established. Within this symbiotic framework, Dadeldhura Hospital assumes a central role as the primary facility entrusted with the responsibility of facilitating and conducting the multifaceted realm of teaching and learning activities within the Faculty of Health Sciences. The formulation of infrastructure for education and the development of curricula are set to adhere meticulously to the standards and guidelines prescribed by esteemed regulatory bodies, including the Nepal Medical Council (NMC), the Medical Education Commission (MEC), and the Nepal Health Professional Council. This unwavering commitment to adherence is designed to ensure the attainment of the loftiest echelons of educational excellence and the provision of comprehensive training in the realm of health sciences.

2. INTRODUCTION TO PUBLIC HEALTH

This Bachelor of Public Health (BPH) will be built upon the backdrop of the overarching purpose of public health to enhance the overall health and quality of life for individuals and communities through (a) implementing evidence-based strategies to prevent the occurrence and spread of diseases, infections, and health risks; (b) encouraging healthy behaviors and lifestyles through education, outreach, and awareness campaigns; (c) ensuring that healthcare services and resources are accessible and affordable to all, regardless of socio-economic status; and (d) mobilizing resources and expertise to respond effectively to public health emergencies, crises, and disasters. In an ever-evolving world where health challenges are both diverse and complex, public health plays a pivotal role in safeguarding and improving the health and well-being of individuals, communities, and populations at large.

3. CAREER OPPORTUNITIES FOR PUBLIC HEALTH PROFESSIONALS

Graduates holding a Bachelor of Public Health (BPH) degree have a wide array of career prospects spanning various sectors. These include positions within government health departments, both at the national and local levels, where they can serve as public health officers, epidemiologists, health educators, or program managers, contributing to the development and execution of public health policies. BPH graduates can also find opportunities in numerous non-governmental organizations (NGOs) committed to public health initiatives, working on projects encompassing maternal and child health, sanitation, non-communicable diseases, nutrition, and disease prevention.

The graduates can also pursue careers as research analysts, examining public health trends and program effectiveness, or work as epidemiologists, investigating disease patterns and causes. Graduates may also opt for consultancy roles, offering research services to organizations and agencies. Other options include data analysis, clinical research, health survey analysis, qualitative research, program evaluation, health economics research, project management, grant writing, and health communication research. Academic institutions provide avenues for teaching and research roles, fostering the education and training of future public health professionals while investigating local health issues.

Public health entrepreneurship represents a promising career option for individuals seeking to make a positive impact on public health while embracing entrepreneurial endeavors. Public health entrepreneurs have the opportunity to develop solutions, whether through technology, educational programs, or healthcare services, to combat specific health issues. Their initiatives may range from creating mobile applications promoting healthy lifestyles to launching companies specializing in preventive healthcare measures or establishing organizations dedicated to expanding healthcare access to marginalized communities. This career path offers the potential for financial success alongside the intrinsic reward of improving public health outcomes and enhancing individuals' well-being.

These diverse career opportunities empower BPH graduates to make a substantial impact on the health and well-being of individuals, communities, and populations.

4. BACHELOR OF PUBLIC HEALTH PROGRAM – VISION, MISSION, GOAL, AND OBJECTIVES

4.1 VISION: Create a world where every individual and community enjoys optimal health and well-being by cultivating a new generation of public health leaders who inspire positive change and promote health equity.

4.2 MISSION: Provide a dynamic and comprehensive academic program that equips future public health leaders with the knowledge, skills, competencies, and ethical principles for achieving excellence in public health practice and research, through high-quality education, critical research, community engagement, and ethical values.

4.3 PROGRAM GOALS: The primary goal of the project is to furnish students with a robust foundation in public health theories, principles, and practice. Our program will stimulate students into research initiatives and cultivate critical thinking and evidence-based problem-solving skills.

Students' learning experiences will be facilitated by substantial community partnerships and enriching engagement in real-world public health initiatives. Students will receive a global perspective to address public health predicaments emphasizing international collaborations. The program will nurture public health leadership proficiencies and concentrate efforts to advance advocacy for policies and practices that ensure social justice and mitigate health disparities.

4.4 OBJECTIVES: To concretize our mission and attain our goals, we have defined specific objectives for our BPH program:

- Achieve curriculum excellence to sustain a rigorous and contemporary curriculum in alignment with optimal practices in public health education.
- Create research opportunities for undertakings, cultivating critical thinking and analytical acumen.
- Build community partnerships to initiate and sustain collaborative affiliations with local and global communities, facilitating experiential learning and service.
- Foster ethical education to integrate ethical deliberations into all facets of the curriculum, underscoring social responsibility and ethical advocacy.
- Develop Leadership empowering students to evolve into leaders in the domain of public health.
- Ensure health equity initiatives to conceive programs targeted at addressing health disparities and propelling equitable health outcomes.

5. COMPETENCIES OF PUBLIC HEALTH GRADUATES

Public health graduates should possess a diverse set of competencies and skills that prepare them to address public health challenges and promote the well-being of individuals, communities, and populations.

- Public health practice
 - Design and implement strategies to promote healthy behaviors, raise awareness, and educate communities about health risks and prevention
 - Develop, implement, and evaluate public health policies and programs, often involving collaboration with various stakeholders.
 - Understand the principles of epidemiology, including the study of disease patterns, risk factors, and the distribution of health outcomes in populations.
 - Engage and work effectively with communities, including diverse populations while understanding local needs, and fostering collaboration.
 - Utilize technology and data systems to collect, manage, and analyze health data for informed decision-making and program evaluation.
 - Leadership and management for leading teams, organizations, or initiatives aimed at improving public health.
 - Comprehend the social determinants of health and how social, economic, and cultural factors impact health outcomes.
 - Respond to public health emergencies and disasters including planning, coordination, and communication.

- Convey public health information to diverse audiences, including policymakers, healthcare providers, communities, and the public.
- Public Health Research
 - Design studies, collect and analyze data, and evaluate the effectiveness of public health programs and interventions.
 - Design and conduct epidemiological investigations to identify health trends and assess the effectiveness of interventions.
 - Analyze health data, interpret research findings, and make evidence-based decisions.
 - Assess and mitigate environmental hazards, promote sanitation, and address issues related to air and water quality.
 - Analyze health policies, manage healthcare programs, and advocate for policy changes that promote public health.
 - Work collaboratively with professionals from various disciplines, including healthcare providers, policymakers, social workers, and educators, to address complex public health issues.
- Ethics and professionalism
 - Understand issues related to privacy, informed consent, and the ethical conduct of research and public health programs.
 - Adher to ethical standards, maintaining professionalism, and upholding public health principles are critical competencies for ensuring integrity in public health practice.

6. COURSE STRUCTURE

The program spans four academic years, comprising eight semesters, with a primary focus on general public health courses. Concurrently, students will engage in residential fieldwork throughout their academic journey. To graduate, a student must fulfill a total of 145 credit hours through coursework, fieldwork, seminars, and dissertation work. The program's language of instruction and examination is English.

7. COURSE CODING

Each course is denoted by the first letter of the course title, followed by a three-digit number, and credit hours indicated after a decimal point.

8. CREDIT AND EQUIVALENT HOURS

- One credit of theory corresponds to 16 hours of classroom instruction and learning activities.
- One credit of practical or practicum conducted in a classroom or laboratory setting corresponds to 48 hours.
- One credit of field-based practical or practicum activities corresponds to 60 hours. During field activities, a student is expected to dedicate a minimum of 6 hours per day.

To fulfill the requirements of the program, a student must contribute 1728 hours for theories and 2100 hours for practical and field activities, totaling 3828 hours across eight semesters in order

to complete the 145 required credits. This means that, on average, a student should allocate 480 hours per semester for both theories and practical/field activities. It is assumed that one semester consists of 95-100 working days and approximately 570-600 working hours.

9. DURATION OF STUDY

The standard timeframe and the maximum allowable period for fulfilling all the prerequisites of the BPH program are outlined as follows:

- Standard Duration: 4 Years (8 Semesters)
- Maximum Duration: 8 Years

SECTION B: ADMISSION AND EXAMINATIONS

1. ENTRY PRE-REQUISITES

To be eligible for admission to the BPH program, prospective students should have all the eligibility requirements enforced by the Medical Education Commission. The applicants must have completed the Intermediate in Science (I. Sc.) or Higher Secondary Level (10+2) in the science stream with a focus on biology with 50% in aggregate or 2.4 GPA. Those who have passed A level, they must have 50% in aggregate with the subjects inclusive of physics, chemistry and biology or having 2.4 GPA and must have the equivalence certificate.

Or, they may hold a Proficiency Certificate Level (PCL) in Science or a Certificate in Health Sciences, including qualifications like PCL in General Medicine, PCL Lab Technology, PCL in Dental Hygiene, PCL in Ophthalmology, Certificate in dental science, PCL in Nursing, radiography, Ayurveda, Physiotherapy or equivalent with 50% in aggregate and having registered in respective council.

In addition to meeting the academic prerequisites, all applicants are required to participate in an entrance examination as part of the admission process.

2. ADMISSION PROCEDURE

An announcement inviting applications for admission is made publicly. To obtain the application forms and information brochures, individuals can request them from the relevant school/college and pay the designated fee. Eligible candidates are notified about the entrance test, including the date and time, by the school/college/university.

Admission is strictly based on merit, primarily determined by candidates' performance in the entrance examination.

Candidates provisionally admitted, contingent on submitting their qualifying certificates, must submit an application confirming their commitment to provide these certificates within one month of admission. Failure to do so may result in the cancellation of their admission. All

students must submit their all certificates and credentials from SLC to the Intermediate level including their citizenship)

3. ACADEMIC SCHEDULE

An academic year is divided into two semesters, each lasting for 16 weeks. The Fall semester typically commences in September, while the Spring semester typically commences in March. At the undergraduate level, new admissions are typically admitted at the start of the Fall semester. FWU releases its annual academic calendar.

4. EVALUATION

A student's academic progress in a course is assessed through two phases:

- Internally, by the respective faculty member, through methods like quizzes, tutorials, lab work, homework assignments, class tests, class participation, term papers, and internal exams.
- Externally, by the Office of the Controller of Examinations at Far western University, through end-of-semester examinations.

Internal evaluation carries a 50% weightage, while external evaluation (semester-end examination) carries the remaining 50%. To successfully pass a course, a student must meet the requirements for both internal and external evaluations independently. The final grade assigned to a student in a course is determined by their overall performance in both internal and external evaluations. If a student's performance falls below the minimum requirements during internal evaluation, they will receive a "NOT QUALIFIED (NQ)" status and will not be permitted to participate in the semester-end examination for that specific course.

5. ATTENDANCE REQUIREMENTS

Students are required to participate in all scheduled lectures, tutorials, seminars, and practical classes. Nonetheless, recognizing that late registration, illness, and unforeseen circumstances may occur, the attendance criteria will necessitate a minimum of 80% attendance in the classes that have been conducted. In the event that a student is absent from the school/college for a period exceeding four consecutive weeks without obtaining prior permission from the principal/director, their name will be withdrawn from the school/college register.

6. COURSE REGISTRATION

Students are required to complete their university registration during the first semester, and individual registration numbers will be issued by the university at the conclusion of the first semester. A student's academic history is documented based on the courses they enroll in each semester and the corresponding grades they achieve. Course registration takes place at the onset of the first semester. Given that registration is a crucial component of the credit system, it is imperative that all students attend the school for this process. In the event of illness or

extraordinary circumstances during the registration period, students must notify university authorities.

7. REPEATING A COURSE

Each course is eligible for enrollment and grading only once. As a degree requirement, it is imperative that students pass all individual courses. Therefore, if a student fails in a course upon initial completion, they are required to re-enroll in the course when it is offered and successfully fulfill its requirements. A student is permitted to retake a maximum of two courses with the aim of achieving a minimum Cumulative Grade Point Average (CGPA) of 2.0. The grade attained in the retake examination will replace the previous grade earned by the student in that specific course. It's important to note that a student can retake a course solely when it is made available by the college or university

8. TRANSFER OF CREDIT HOURS

A maximum of 25% of the total credit hours required for a course completed in an equivalent program at a recognized institution may be considered for transfer or credit waiver. This decision is subject to the recommendation of the faculty head. To be eligible for credit transfer, a student must have achieved a grade of C or higher in the respective course. Courses taken more than three years prior to the transfer request may not be eligible for credit transfer. The University's relevant Subject Committee will assess and evaluate the applicant's request for credit transfer. The decision to grant transferred credits will be based on the applicant's performance at the previous university they attended.

9. UNSATISFACTORY RESULTS

After the results of the semester-end examination are released, a candidate has the option to request a re-totaling or rechecking of the grades in accordance with the regulations outlined by FWU University by paying the designated fee.

10. DEGREE REQUIREMENTS

To be eligible for graduation, a student must meet the following criteria:

- Attain a grade of 'D' or higher in each subject as specified in the curricular structure section.
- Successfully complete all the required courses and the dissertation as outlined in the curricular structure section within the maximum duration stipulated in the duration of study section.
- Maintain a Cumulative Grade Point Average (CGPA) of 2.00 or higher.

11. GRADING SYSTEM

The letter grade assigned to a student for a subject is determined by their combined performance in both internal and final examinations. This letter grade reflects the student's relative performance in that particular course. The grading system is outlined as follows:

Grade	Grade Point	Description
A	4.0	Outstanding
A-	3.7	Excellent
B+	3.3	Very Good
B	3.0	Good
B-	2.7	Fair
C+	2.3	Fair
C	2.0	Fair
C-	1.7	Poor
D	1.0	Poor
F	0	Fail

Only in exceptional and uncommon situations, if a student is unable to complete all the required coursework for a course, they may receive an "Incomplete" grade, denoted as "I." If the outstanding coursework is not finished within the subsequent semester, the "I" grade will automatically be changed to an "F." A student who receives an 'I' grade is not obligated to enroll in that subject during the following semester to fulfill the outstanding requirements.

A student's performance in a semester is assessed based on the Semester Grade Point Average (SGPA), which represents the grade point average for that specific semester. The Cumulative Grade Point Average (CGPA) reflects the grade point average for all completed semesters.

- $SGPA = (\text{Total honor points earned in a semester}) / (\text{total number of credit hours taken in a semester})$
- $CGPA = (\text{Cumulative total honor points earned}) / (\text{cumulative total number of credit hours taken})$

where, Honor Point = Grade point earned in a subject \times Number of credits assigned to that subject

12. DISMISSAL FROM THE PROGRAM

Students are required to maintain a minimum CGPA of 2.0. If a student's academic performance in previous semesters indicates an inability to maintain this CGPA, they may face dismissal from the program.

13. DISTINCTION AND DEAN'S LIST

Students achieving a CGPA of 3.6 or higher will be awarded the BPH degree with distinction. The Dean's list acknowledges exceptional academic achievements, and to qualify for it, students must attain a CGPA of 3.7 or above.

14. FINAL EXAMINATION AND GRADUATION

The Office of the Controller of Examinations at Far Western University is responsible for conducting all semester-end examinations. The examination timetable will be published at least two weeks prior to the examination period, detailing the date, time, duration, and examination centers. It is the candidate's responsibility to attend the semester-end examination at the correct time and location while adhering to examination regulations.

The official examination results will be published on the Far Western University website. It is the student's responsibility to review their results diligently to ensure they meet all degree requirements.

The Office of the Controller of Examinations at Far Western University will organize the graduation ceremony. Graduates interested in participating in the ceremony must complete a diploma request form with the Office of the Controller of Examinations. During the graduation ceremony, degrees, diplomas, honors, and medals will be conferred upon the graduates. To partake in the ceremony, students must acquire official verification of their transcripts from the Office of the Controller of Examinations.

15. AWARD OF DEGREE

Upon successfully fulfilling all requirements and achieving a CGPA of 2.0 or higher, the student will be conferred with a Bachelor of Public Health (BPH) degree.

16. ACADEMIC INTEGRITY

Students are strictly prohibited from engaging in plagiarism and employing unfair practices during class assignments, tests, report writing, and final examinations. The following actions will be regarded as adopting unfair practices during examinations:

- Plagiarism i.e., presenting someone else's work without proper attribution.
- Cheating i.e., using unauthorized materials, methods, or assistance in exams, tests, assignments, or assessments.
- Creating false or misleading data, or citations in academic assignments or research.
- Collaborating with fellow students to obtain assistance when they are required to work independently.
- Replicating content from another student's script/report/paper.
- Accessing unauthorized exams, assignments, or faculty materials.
- Using notes stored on disks, palms, mobile phones, or any other incriminating materials.
- Submitting the same work for different courses or assignments without obtaining prior approval from the faculty
- Possessing any incriminating documents or electronic devices, regardless of their usage.
- Attempting direct or indirect influence on instructors or examiners to change grades or evaluation outcomes dishonestly.
- Engaging in disruptive behavior that disrupts the academic program.
- Altering or forging academic records, transcripts, or other official documents

Violating academic integrity may result in the student's expulsion from the program and being expelled from Far Western University.

Please note: The stipulations outlined in this document are not considered binding agreements between Far Western University and its students. The University retains the right to modify any clauses or prerequisites detailed in this document at any time, without prior notice, during the students' tenure. Students are expected to comply with the most recent terms or conditions of the University. By enrolling in the Far Western University system, students are indicating their understanding of and consent to all provisions, including potential modifications, of the University.

SECTION C: CURRICULUM STRUCTURE

Semester I

Course Code	Course Title	Theory credit hours	Practical Credit hours	Total Credit hours
PHF 111	Foundations of Public Health	3		3
BHS 111	Anatomy and Physiology	3	1	4
BHS 112	Biochemistry and Immunology	3	1	4
BHS 113	Microbiology and Parasitology	3	1	4
PHA 111	Professional English	3	1	4
	Total	15	4	19

Semester II

Course Code	Course Title	Theory credit hours	Practical Credit hours	Total Credit hours
PHF 151	Introduction to Public Health	3	1	3
PHR 151	Epidemiology	3	1	4
BHS 114	Pharmacy, Pharmacology, and Toxicology	3	1	4
PHR 152	Biostatistics	3	1	4
PHR 153	Demography and Population Science	3	1	4
	Total	15	5	20

Semester III

Course Code	Course Title	Theory credit hours	Practical Credit hours	Total Credit hours
PHR 211	Research Methods	3	1	3
PHR 212	Implementation Research	3	1	4
PHI 211	Reproductive Health, Maternal, Child and Adolescent Health	3	1	4
PHI 212	Communicable Diseases	3	1	4
PHI 213	Non-Communicable Diseases	3	1	4
	Total	15	5	20

Semester IV

Course Code	Course Title	Theory credit hours	Practical Credit hours	Total Credit hours
PHI 251	Environmental and Occupational Health	3	1	3
PHI 252	Climate Change and Human Health	3	1	4
PHS 251	Urban and Rural Health Care Systems	3	1	4
PHI 253	Violence, Accidents, Injuries and Disaster Management	3	1	4
PHI 254	School Health	3	1	4
	Total	15	5	20

Semester V

Course Code	Course Title	Theory credit hours	Practical Credit hours	Total Credit hours
GHP 311	Globalization and Global health	3		3
PHM 311	Health Management	3	1	4
PHM 312	Health Economics and Financing	3		3
PHR 311	Medical Sociology and Anthropology	3		3
PHM 313	Health Promotion	3		3
	Total	15	1	16

Semester VI

Course Code	Course Title	Theory credit hours	Practical Credit hours	Total Credit hours
PHM 354	Health System Building Blocks	3		3
PHM 355	Health Promotion approaches and methods	3		3
PHP 351	Community Health Diagnosis	3	3	6
PHM 356	Health Care System of Nepal	3		3
PHM 357	Health Education and Communication	3	1	4
	Total	15	4	19

Semester VII

Course Code	Course Title	Theory credit hours	Practical Credit hours	Total Credit hours
PHM 411	Monitoring and Evaluation	3	1	4
PHM 412	Training Conduction and Evaluation	3	1	4
PHM 413	Project Management	3	1	4
PHP 414	Public Health Internship		3	3
PHP 411	Comprehensive Municipality Health management (Residential Field practice)		3	3
	Total	9	9	18

Semester VIII

Course Code	Course Title	Theory credit hours	Practical Credit hours	Total Credit hours
PHM 451	Public Health Laws and Acts	3		3
PHF 451	Public Health Ethics	3		3
PHP 452	Public Health Dissertation		9	9
PHP 451	Journal Club/ Public Health Seminar		1	1
	Total	6	7	16

First Year

Semester I and II

Course Title	Foundations of Public Health	
First Year	First Semester	Course code: PHF 111
Credit Hours: 3	Full Marks: 100	Pass Marks: 50

COURSE DESCRIPTION:

The course offers an opportunity to develop a holistic understanding of context and scope of public health, including philosophy, definition and historical development of public health in national and international context. The course attendant will learn the clear concept of health, disease, spectrum of health and disease, preventive health and levels of prevention. The course is expected to help students to understand the meanings of community health, community medicine and curative medicine, national and international public health problems, burden of problems as well as the effects of those problems on health. The course attendant will learn different national efforts and international declarations as significant forces influencing public health.

LEARNING OBJECTIVES:

Upon the successful completion of the course, the students will be able

- to: Explain the meaning of public health, its philosophy, scope
 - and ethics. Identify the historical development of public health
 - and ways.
 - Demonstrate holistic understanding of health, disease and preventive health.
 - Explore the current national and international public health problems and issues
- Explore national efforts and international declarations as significant forces influencing public health.

Course Contents

UNIT 1: INTRODUCTION TO PUBLIC HEALTH

32 HOURS

- Concept, definition, philosophy and scope of public health

2 hours

HISTORICAL DEVELOPMENT OF PUBLIC HEALTH

12 HOURS

- Public health in the global context
 - The Pre-Christian period
 - The middle ages
 - The age of the black death
 - The Renaissance period
 - The 18th and 19th centuries (enlightenment period)

<ul style="list-style-type: none"> ○ Modern age ▪ Public health in Nepalese context. <ul style="list-style-type: none"> ○ Ancient and pre-unified period ○ After Unification and during Rana period ○ From 2007 and during Panchayat period ○ After 2047 BS 	
<ul style="list-style-type: none"> ▪ CONCEPT OF HEALTH AND DISEASES 	6 HOURS
<ul style="list-style-type: none"> ○ Concept of health ○ Concept of diseases ○ Concept of being healthy ○ Spectrum of Health and Disease ○ Natural history of disease 	
<ul style="list-style-type: none"> ▪ PREVENTIVE HEALTH AND LEVELS OF PREVENTION 	8 HOURS
<ul style="list-style-type: none"> ○ Concept of Prevention ○ Concept of Preventive Health ○ Level and scope of preventive health <ul style="list-style-type: none"> - Primordial Prevention - Primary Prevention - Secondary Prevention - Tertiary Prevention 	
<ul style="list-style-type: none"> ▪ CONCEPT OF COMMUNITY HEALTH, COMMUNITY MEDICINE AND CLINICAL MEDICINE 4 HOUR 	
<ul style="list-style-type: none"> ○ Concept of Community Health ○ Concept of Community medicine ○ Concept of Clinical Medicine ○ Relation and difference between them 	
UNIT 2: SITUATION AND EFFORTS IN PUBLIC HEALTH	16HOURS
<ul style="list-style-type: none"> ▪ INTERDISCIPLINARY APPROACH IN PUBLIC HEALTH 	8 HOURS
<ul style="list-style-type: none"> ○ Epidemiological approach ○ Biostatistics Approach ○ Public Health Laboratory Science Approach of Sociological and Anthropological Approach ○ Cultural and Behavioral Approach ○ Environmental Health Approach ○ Veterinary Science Approach 	
<ul style="list-style-type: none"> ▪ PUBLIC HEALTH PROBLEMS OF RECENT CONCERN 	8 HOURS
<ul style="list-style-type: none"> ○ Current International Problems, Burden and Effects 	

- Mental health, Psychiatry problems and Addictive Problems
- Adolescents and reproductive health Problems
- Major communicable and Non-communicable Diseases
- Emerging Health Problems such as HIV and AIDS, and others
- Re-emerging Health Problems such as Malaria and others
- New mores and New Freedoms
- Economically and Culturally Deprived Population

● PUBLIC HEALTH PROBLEMS AND ISSUES IN NEPAL

4 HOURS

- Communicable Diseases (types, burden causes and effects)
- Non-communicable Diseases (types, burden causes and effects)
- Nutritional Deficiency Disorders (types, burden causes and effects)
- Trauma and Injuries (types, burden causes and effects)

● SIGNIFICANT FORCES INFLUENCING PUBLIC HEALTH

8 HOURS

- Public Health in National Planning of Nepal
- Public health programs in Nepal
- Efforts on Health Awareness and Health Habits
- Roles of Resolution of Selected International Conferences Related to Health
 - Alma Ata Declarations
 - ICPD (Cairo) Declarations
 - Beijing Conference Declarations
 - HABITAT 2nd (Istanbul, 1996) Declarations
 - SAARC Declarations
 - MDGs
 - Other Subsequent Health Related Declarations

TEACHING LEARNING METHODS

Teaching learning method of this course include didactic lectures, group work, Discussion in class room setting and paper presentation by students under direct guidance of course facilitator.

Reading materials

1. Brownson, RC, Baker, EA, Leet, TL, Gillespie, KN. Evidence-Based Public Health. Oxford University Press, 2003.
2. Clark, N.M., Weist, E. Mastering the new public health. American Journal of Public Health. 90 (8).1208-11, 2000.
3. Institute of Medicine. The Future of the Public's Health in the 21 st Century. Washington, DC: National Academy Press, 2003.

4. Park K. Park's Text book of preventive and social medicine, 23rd edition, 2015
5. World Health Organization. The Global Burden of Disease, latest publication
6. American Public Health Association (APHA): www.apha.org
7. Program for International Training in Health (INTRAH): www.intrah.org
8. Public Health Foundation: www.phf.org
9. PubMed (Medline): <http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?db=PubMed>
10. UNAIDS: www.unaids.org
11. UNICEF: www.unicef.org
12. UN High Commission for Refugees: www.unhcr.ch/refworld/refworld.htm
13. United Nations Development Program (UNDP): www.undp.org
14. United Nations Population Fund (UNFPA): www.unfpa.org
15. World Bank: www.worldbank.org
16. World Federation for Medical Education (WFME): www.sund.ku.dk/wfme
17. World Health Organization (WHO): www.who.in

Course Title	Anatomy and Physiology	
First Year	First Semester	Course code: BHS 111
Credit Hours: 3	Full Marks: 100	Pass Marks: 50

Course Description

This course, within the Basic Health Science strand, encompasses the contents of different anatomical positions, structure and function of cell, tissues, organs and systems. It helps students to develop detail knowledge on functions of different systems that gives the clear ideas of normal functioning of body parts which help in maintain the wellbeing of the health.

Learning Objectives

The purpose the course is to provide the essential knowledge and understanding on the structure and function of human body, which will enable the students to understand scientific basis of normal and abnormal physiological processes.

Upon the completion of the course, students will be able to:

- Define basic terminologies used in anatomy and physiology,
- Identify, name and locate different organs and system in human body,
- Describe structure of different human organs by diagram and organ models,
- Describe structural relationship of the organs in human body,
- Describe the normal physiological actions, cascades and ranges in the human body, and
- Differentiate various physiological processes between healthy and unhealthy individual. Course Contents

Unit I: General Introduction 5 hours

- Definition of different terms used in anatomy (anatomical terminologies: anterior, posterior, superior, inferior, proximal, distal, flexion, extension, abduction, adduction, palmar, dorsal and ventral)
- Anatomical planes (sagittal and coronal)
- Anatomical positions (standing, sitting, lying (Supine, prone, side, lithotomy)
- Human cell (structure, functions and description of organelles)
- Tissues (classification, distribution and functions)
- Body fluids and electrolyte balance.
- Homeostasis (positive and negative feedback mechanism)
- Description of body cavities and located organs.

Unit II: Digestive System 5 hours

- Nomenclature of different parts of gastro-intestinal tract.

- Structure and functions of stomach, small intestine and large intestine.
- Structure and functions of Accessory organs (tonsils, salivary gland, pancreas, gall bladder, liver)
- Mechanism of vomiting.
- Brief description of deglutition and defecation.
- Digestion and absorption of carbohydrate, fat and protein.
- Extra hepatic or biliary system

Unit III: Musculo-skeletal System 4 hours

- Bone (introduction, formation, functions and classification (according to shape, region) with their description.
- Joints (Introduction, classification, structure and structural components, Movements)
- Classification, property and functions of muscles.
- Mechanism of muscles contraction and relaxation.

Unit IV: Respiratory System 5 hours

- General introduction of different parts of respiratory system.
- Paranasal air sinuses and functions.
- Functions of larynx, trachea, bronchus and alveoli.
- Structure and function of lung.
- Gaseous exchange and mechanism of respiration
- Mechanism of coughing
- Normal lung volumes and capacities
- Brief discussion about differences in lung volume between healthy individual and individual with changes in the lungs.

Unit V: Blood and Cardiovascular System 8 hours

- Blood: introduction, composition, functions and formations.
- Blood grouping.
- Common disorders of blood: thrombocytopenia, hemophilia.
- Clotting factors and cascades of coagulation.
- The Heart (introduction, structure (external, layers, internal), functions)
- Blood vessels (structure, differences between artery and vein)
- Locations, extension and branches of major blood vessels: aorta, carotid artery and internal iliac artery, axillary artery, brachial artery, radial artery, ulnar artery, femoral artery, popliteal artery, anterior and posterior tibial arteries, dorsalispedis arteries.
- Pulmonary, systematic & portal circulation.

- Concept of cardiac cycle, heartbeat, heart rate, stroke volume, cardiac output, heart sound.
- Blood pressure and its regulatory mechanism.
- Auto-rhythmicity of the heart.
- General concept on physiological differences between healthy individual and individual with hypertensive disorder.

Unit VI: Neuro-Sensory System 6 hours

- Concept on different parts and organs of nervous system.
- Introduction about neurons and supporting cells.
- Structure of brain with their functional areas & spinal cord.
- Functions of different parts of brain, spinal cord, meninges, ventricles and CSF.
- Concept on spinal and cranial nerves and their areas of supply.
- Differences between sympathetic and parasympathetic nervous system.
- Functions of special sense organs.
- General concept on physiological changes in meningitis and encephalitis.

Unit VII: Lymphatic System 2 hours

- Components and functions of lymphatic system
- Lymph: formation, composition and functions.
- Lymph nodes: structure, major groups with distribution and functions
 - Spleen: location, structure and functions.
 - General concept on physiological differences between healthy individual and individual with lymphatic abnormalities

Unit VIII: Endocrine System 3 hours

- Enumeration of different endocrine glands, their position, secretions, and their functions.
- Differences between exocrine and endocrine glands.
- Concept of hormone and regulation of it.
- General concept on physiological differences between healthy individual and individual with endocrine disorder (Diabetes Mellitus and thyroid disorder).

Unit VIII: Reproductive System 6 hours

- Nomenclature of different parts, situation of male and female reproductive system.
- Structure & Functions of male and female genital organs
- Physiology of menstruation with hormonal regulation.
- Basic concepts of spermatogenesis, oogenesis, ovulation and pregnancy.
- Concept on abortion, ectopic pregnancy, cervical cancer.

Unit IX: Urinary System 4 hours

- Functions of urinary system.
- Different parts of urinary system, their situation.
- Structure and functions of kidney and urinary bladder.
- Mechanism of urine formation and micturation.
- General concept on physiological differences between healthy individual and individual with renal failure

Reading Materials

1. Waugh A., Grant A.: Ross & Wilson's Anatomy and Physiology in Health and Illness, Latest Edition. Churchill Livingstone, London.
2. Chaurasia: Handbook of Human Anatomy, CBS Publication. Current Edition.
3. Guyton AC & Hall JE: Guyton Human Physiology and Mechanisms of Disease, Hartcourt Publishers Limited, 1996.
4. Williams PL (Ed): Gray's Anatomy, Recent edition, Churchill Livingstone, London.
5. Hamilton Systemic Anatomy, Recent Edition.

Course Title	Biochemistry and Immunology	
First Year	First Semester	Course code: BHS 112
Credit Hours: 3	Full Marks: 100	Pass Marks: 50

Course Description

This course, under Basic Health Science strand, deals with chemistry of biomolecules with emphasis on the bioenergetics and control of metabolic pathways via regulation of specific enzymes and course includes the structure, function, and metabolism of amino acids, proteins, carbohydrates, lipids, and nucleic acids. It introduces concepts in cell structure, replication and growth, and metabolic regulation.

Course Objectives

This course will investigate the interplay between biological macromolecules such as proteins and nucleic acids, and low molecular weight metabolites (such as the products of glucose metabolism). In this course, students will apply their knowledge of intermolecular forces, thermodynamics (when a reaction occurs), chemical kinetics (how fast a reaction occurs), and chemical structure and functionality to understand how biological molecules (and life) work.

Upon the completion of the course, students will be able to:

- Discuss importance of biochemistry for public health professionals,
- List physiological importance's of surface tension, Viscosity, Osmosis, Osmotic pressure, Diffusion, Buffer and pH, Water,
- Define and list the functions of cell,
- Identify the levels of structure in proteins and describe the stabilization of these structures,
- Describe the structure and mechanism of representative enzymes in biochemical pathways,
- Describe representative mechanisms of enzyme catalysis,
- Describe the primary catabolic and anabolic pathways pertaining to carbohydrates, Fats and lipids, and amino acids, and
- Discuss environmental pollution and heavy metal poisoning.

Course Contents

Unit I: Introduction 1 hour

Introduction and importance of Biochemistry for public health professionals

Unit II: Physiochemical Phenomena 3 hours

Introduction and physiological importance's of Surface tension, Viscosity, Osmosis, Osmotic pressure, Diffusion, Buffer and pH, Water (types, properties and importance).

Unit III: Basic Concept of Animal Cell 3 hours

Introduction and function of Cell and Cell Membrane, Introduction and function of Subcellular Organelles, (Cell Composition, Sub cellular organelles, Nucleus, Endoplasmic reticulum, Golgi apparatus, lysosomes and mitochondria), Molecular Organization of cell.

Unit IV: Bio Nutrients 16hours

Introduction, Definition, Classification, Nomenclature, Bio-medical importance's and Physiochemical properties of, Carbohydrates, Lipid, Fatty acids, Amino acids, Proteins, Lipoproteins, Nucleic acids (Nucleotide, Nucleoside); Hormones (Introduction, definition, classification, gland and the gland secreting hormones); Enzymes (Introduction, definition, Classification, physiological importance)

Unit V: Metabolic Concept of Macronutrients 8 hours

Digestion, Absorption, and Metabolism of Carbohydrate, Entry of glucose into cell, Introduction and importance's of Glycogenesis, Gycogenolysis, Gluconeogenesis, Glycolysis, Tricarboxylic acid cycle, Hexose monophosphate shunt pathway, Effect of hormones on carbohydrate metabolism, Digestion, Absorption and Metabolism of Protein, Introduction and importance's of Urea cycle, Digestion, Absorption and Metabolism of lipids, introduction and importance's of fatty acid oxidation, peroxidation of lipid.

Unit VI: Micronutrients 6 hours

Introduction, Definition, Classification, Physiological Functions, dietary Source, RDA and deficiency manifestations of Vitamin (fat and water soluble), Introduction, Definition, Physiological Functions, dietary Source, RDA and deficiency manifestations of Iron, Calcium, Phosphorous and Iodine.

Unit VII: Environmental Pollution and Heavy Metal Poisons 3 hours

Corrosives and irritants, Organic irritant poisons, Neurotoxins, Heavy metal poisons, Lead, Mercury, Aluminum, Arsenic, Pesticides and insecticides, Air pollutants, Toxic substances in food stuffs.

Unit VIII: Immunology 8 hours

- Introduction to immunology
- Types of Immunity
- Antigen, antibody and antigen-antibody reaction
- Hypersensitivity reaction.
- Defense mechanism of body.
- Different type of vaccines and its uses
- Mechanism of infection and its types.

Reading Materials

1. Robert K. Murray, Daryl K. Granner, Peter A. Mayes and Victor W: Rodwell, Harpers Biochemistry Latest Ed. Appleton and Lange, Stanford, CT.
2. LubertStyrer: Biochemistry (4th Ed.) W. H. Freeman and Company.
3. David L. Nelson and Michel M. Cox: Lehninger's Principles of Biochemistry, (3rd Ed.) 2000, Macmillan Worth Publisher.
4. DM Vasudevan. Textbook of Biochemistry for Medical Students, 6th Edition

Course Title	Microbiology and Parasitology	
First Year	First Semester	Course code: BHS 113
Credit Hours: 3	Full Marks: 100	Pass Marks: 50

Course Description

The course encompasses the overview and in-depth theoretical aspects of different microorganisms including bacteria, virus and fungi. The course is focused on salutogenic effects of these microorganisms followed by the diseases of public health concern; they cause. The course also covers the techniques of sterilization, the methods of destructing the pathogenic microorganisms.

Learning Objectives

The purpose of the course is to acquire the basic concepts of microorganisms, their harmful as well as beneficial pathogenesis, and human responses towards their invasion.

The course also attempts to develop the skills/techniques of destructing the harmful pathogens.

Upon the completion of the course, students will be able to:

- Describe basic concepts of microbiology and immunology,
- Portray different aspects of bacteria and pathogenesis and immunogenesis,
- Illustrate the different aspects and description of bacteria of public health concern and the diseases they cause,
- Elaborate different aspects of viruses and the diseases of public health concern,
- Explain different aspects of fungi, and
- Make the immune response and defense mechanism of human body visible.

Course Contents

Unit I: Introduction to Microbiology 2 hours

- History, Concept and definition of microbiology
- Scope and importance of microbiology in public health concern.

Unit II: Introduction to General Bacteriology 8 hours

- Introduction, definition and concept of bacteria.
- Classification of bacteria
- Morphology and physiology of bacteria
- Growth and nutrition of bacteria.
- Different type of cultural media and its technique.
- Mechanism of bacterial pathogenesis.

Unit III: Applied Microbiology 3 hours

- Sterilization and disinfection technique: definition, principle, type, procedure and uses.
- Normal bacterial flora of human body
- Opportunistic and pathogenic organisms.

Unit IV: Systemic Bacteriology 15 hours

- Introduction, characteristic, epidemiology, pathogenesis, mode of transmission, clinical sign and symptom, lab diagnosis, preventive measure and treatment to bacterial diseases of public health concern: Staphylococci, Streptococci, E. coli, Salmonella, Shigella, vibrio, Nesseria gonorrhoea, Haemophilus, Mycobacterium tuberculosis, Mycobacterium Leprey, Pseudomonas, Treponema, Corynebacteria, Chlamydia, Clostridia

Unit V: Virology 10 hours

- Introduction and scope of virology.
- General properties of virus.
- Classification and replication of virus.
- Cultivation of virus
- Introduction, characteristic, epidemiology, pathogenesis, mode of transmission, clinical sign and symptom, lab diagnosis, prevention and control treatment to viral diseases of public health concern: (RSV, Arboviruses, Retrovirus-HIV, Rotavirus, Hepaduaviruses, Coronaviruses, Picornaviridae-Polio, Rhabdoviridae-Rabies, Adenovirus, OrthomyxoviridaeInfluenza, Paramyxoviridae- Measles)

Unit VI: Mycology 2 hours

- Introduction, definition, characteristic and classification of fungi.

Parasitology

Unit VII: General Parasitology 4 hours

- Introduction, scope, classification, host parasite interrelationship, types of host and parasites.

Unit VII I: Protozoology 9 hours

- Introduction, geographical distribution, habitat, morphology, life cycle pathogenesis, clinical significance, lab diagnosis, prevention and treatment of common protozoa like: malaria parasite, kala-azar, giardia, amoeba, toxoplasma gondii

Unit IX: Helminthology 9 hours

- Introduction, geographical distribution, habitat, morphology, life cycle pathogenesis, clinical significance, lab diagnosis, prevention and treatment of common protozoa like: ascaries, echinococcus, hook worm, tanciasaginata and tanciasolium, filarial parasite

Unit X: Techniques of Sample Handling 2 hours

- Techniques of sample collection, transportation, storage and preservation of parasitological specimens

Reading Materials

1. Chakraborty, P. Microbiology, 2nd edition, 2003, Kolkata.
2. Ananthanarayan and Paniker's, 9th edition textbook of microbiology
3. Pelczar MJ, Chan ECS and Krieg NR: Microbiology, 5th edition Tata McGraw Hill Book Company: New Delhi, 1986
4. Cheesebrough M.: Medical Laboratory Manual for Tropical Countries, Vol I & Vol II. ELBS, 1996
5. Fuerst R.: Microbiology in Health and Diseases, W.B. Saunder & Co, 1995.
6. Mackoe and Mac Cartney Cathey MC.: Practical Medical Microbiology, Churchill Livingstone, 1994
7. Ivan Riot: Essential Immunology, ELBS-9th Edition, 1999
8. Topley & Wilsons: Bacteriology, Virology & Mycology
9. Bailey & Scott's: Diagnostic Microbiology
7. Panikar CKJ. Textbook of Medical Parasitology, 6th Eds, Jaypee Brothers, Medical Publishers, 2007.
8. Parija, S.C. Review of Parasitic Zoonoses. A.I.T.B.S. Publishers and Distributors, Delhi.
9. Arora, D.R. and Arora B. Medical Parasitology. CBS Publishers and Distributors, New Delhi.
7. Chatterji, K.D. Parasitology (Protozoology and Helminthology). Medical Publishers, Calcutta, India.

- Variety of English: Dialect, Register and Idiolect (British, American, formal, informal, polite, familiar, written, spoken, tentative, personal and impersonal)
- Technical talk, types, characteristics, preparation, presentation, ways of overcome stage fear
- Technical communication: Definition, Importance, difference, major forms, Dimension, Types, Elements, 7'cs of communication, Barriers and tips to improve.
- Interview: Definition, Objectives, Aspects of preparation, Process, Factors responsible for failures and ways to outcome

Unit III: Technical Writing Skill

20 hours

- Definition, Characteristics based on audience, language: concreteness, conciseness, clarity and purposefulness (Ways to form concreteness, conciseness and clarity with some practical questions to convert as per instruction)
- Calling meeting (notice), writing minutes (Definition, parts-Beginning, or introduction, Attendance, Special Attendance, Agenda, Decisions, Closing Signature).
- Preparation of Memorandum: Definition, Importance\purpose, Criteria, Types and practice on appropriate health messages.
- Business Letters: Definition, Characteristics, Difference with personal letter, Format\ Styles, Elements, Types, Job application and resume preparation
- Paragraph Writing: Definition, Features, types and practice.
- Report Writing: Definition, characteristics, Importance, types: Oral and Written, Long and Short, Formal and Informal, Technical and Research. Criteria /Components of writing Report based on Technical and Research Report, and Sample of Report based on Lab, Trip, Feasibility, Progress report and non-technical report related on health issues. (Teacher should make practice of references/Citation/bibliography based on MLA or APA format)
- Proposal Writing: Definition, Important, types, Parts of a proposal, Difference between proposal and report.

Unit IV: Reading Skill

13 hours

- Comprehension questions and exercises from prescribed texts (kinship and the family, Road Foundation, Use and Misuse of Science, Marriage is a private affair (Achebe), Curbing the One-Eyed Monster (Jenkins), Teaching in the Television Culture (Girgus and Tichi), A Fight between a Lion and a Crocodile (Haggard) and The Brave Little Parrot (Martin)
- Note Making: Importance, Ways, Examples.
- Summarizing: Definition, Importance, The five 'R' techniques of writing summary (Read, Reduce, Record, Review and Rewrite) Difference between précis and summary, techniques of Summarizing. Practical Work: Preparation of note making and summarizing.

- Time Management: Importance, Identifying time wasters, Four Chambers of time management, Steps for Proper Management of Time.

Reading Materials

1. Anne, Eisenberg. (1982). Effective Technical Communication. McGraw-Hill Inc.
2. Khanal, Arjun. (2010). Communication Skills in English. Sukunda Pustak Bhawan: Bhotahity, Kathmandu.
3. V. R. Narayanswami. Strengthen Your Writing. Orient Longman: Madras.
4. Raman, Meenakshi and Sangeeta Sharma. (2012). Technical Communication Principles and Practice. Oxford University Press: Haryana.
5. Adhikari, Dharma and Phanindra Upadhyaya. (2014). Technical Communication Concept and Process. Buddha Publication: Anamnagar, Kathmandu.
6. Anne Eisenberg, Effective Technical Communication, Mc-Graw Hill 1982.
7. Houp and T.E. Pearsall, Reporting Technical Information, Allyn and Bacon, Boston.
8. V.R. Narayanaswami, Strengthen your writing, Orient Longman, Madras.
9. Champa Tickoo & Jaya Sasikumar, Writing with a Purpose, Oxford University Press. 10. A handbook of pronunciation of English words (with 90-minute audio cassettes)