Bachelor of Public Health

(BPH)

CURRICULUM

RAJARSHI JANAK UNIVERSITY

2076

Bachelor of public health program.

General Introduction:

Rajarshi Janak University (RJU) is established under sub-section 1 of section 296 of constitution of Nepal in B.S. 2074, aiming to produce highly qualified graduates to meet the need of contemporary challenges by promoting research excellence in a free as well as scholastic environment to provide a valuable contribution to different aspects of nation.

Public health approach envisions to improve the lifestyles of the people. Therefore it is known as an important discipline of science. Public health has been growing up with different modest and applicable approaches that can contribute in insuring the health of people. The major school of thought of public health science is to promote the health of people through preventive and promotive strategies. A practical and applicable educational model needs to be introduced. Bachelor of public health program of Rajarshi Janak University is rightly designed to produce middle level young scientists who can competently work for the prevention of the disease and promotion of disease control strategies. In this light, introduction and implementation of quality education is become a principal motto of this program which envisioned to contribute in achieving the target of national health development.

Public health promotes and protects the health of people and the communities where they live, learn, work and play through interdisciplinary actions. Double burden of diseases remain among the most devastating problems facing the majority of the world's poor and all needy people, and continue to dominate the health of the world's poorest nations. We have dire need to build health people, society, nation and world. Obviously, public health professionals can lead to solve the existing public health problems.

Goal:

Bachelor of Public Health program, is designed to produce qualified graduates in the field of public health, who are highest theoretically sound, technically and practical skill.

OBJECTIVES:

BPH program designed to achieve the following objectives:

The course of BPH is designed to achieve the following objectives to:

- Develop the knowledge and skills in applied health sciences, laboratory works on applied health sciences and their application.
- Introduce and enhance the knowledge and practical skills in public health, primary health, health systems development, health economics, nutrition and environmental health.

- Train and develop the skills on epidemiological aspects of diseases and health system.
- Develop skills in designing, analyzing and evaluating applied public health science research and management.
- Enhance the knowledge and practical skills in dealing with human resource development and existing issues in public health management.
- Develop the research and scientific writing skills through the introduction of practical skill development and thesis.
- Ensure the skillful, practical and leading human resources through the community diagnosis and comprehensive field practices.
- Develop the extracurricular competencies through training, seminar and exposure.

CAREER OPPORTUNITIES

There is growing concern for improvement of health status from all stakeholders within Nepal or in the foreign countries. Provision of equitable access to health care for attainment of an acceptable level of health and better quality of life of the people by creating more equitable distribution of resources is the dominant concern of Nepal today. In many parts of the world scientists are investing themselves in introducing public health interventions that can deal with the lifestyle. However, Nepal is facing four fold burdens of diseases (Non-communicable, communicable, life style related and poverty). In order to cope with this complex situation, development of public health graduates has become inescapable. Few number of public health workers are working within Nepal or in the other countries. In general, a BPH graduates can choose following area to build the career:

1. Civil servant – employed in government offices
2. Academic Institutions
3. Health Organization (Multilateral and Bilateral)
4. NGOs/INGOs
5. UN Agencies
6. Hospital Management
7. Health Research organization

Duration and academic schedule of the program

The BPH program will be of a period of eight semesters (four academic years). However, the course can be completed within eight years from the time of admission. Each academic session consists of two semesters per year. First semester starts in September and the second semester begins in March.

Medium of teaching and examination

The medium of instruction, text books in all subjects and examination for BPH program will be English.

ADMISSION AND EXAMINATION

1. Entry requirement for new student

The entry requirement for a new student in BPH will be Intermediate in Science (I. Sc., Biology group) or Higher Secondary Level 10+2 (Biology group) from recognized institutions with minimum of 50% aggregate marks or minimum grade "C" in grading system in aggregates in all subjects or PCL (Science, Biology group) or I.Sc. or equivalent with the minimum of 50% aggregates marks in PCB (Physics-Chemistry-Biology) or grade "C" in grading system in aggregates in all subjects. Besides the basic academic requirement, an entrance examination will be held for all applicants.

2. Admission procedure

A notice inviting application for admission is publicly announced. The application forms and information brochures are provided, on request, after the payment of the prescribed fee.

The concerned college scrutinizes the applications. The eligible candidates are informed to take the entrance test. The date and time for the entrance test is informed to the prospective students by the college. The college may also interview the candidates for final selection for admission.

The candidates, who are given provisional admission under special condition, are required to submit all necessary documents within a month of the beginning of regular classes. Otherwise, the admission will be annulled.

Student must qualify the entrance test held by the University. The students will be admitted on merit basis.

3. Student evaluation

The student's academic performance during a semester will be evaluated internally (session work) and externally (the final examination).

Examination pattern for Theory and practical:

University Exam: 60%

Internal assessment: 20%

Assignments: 20%

Candidate has to pass separately in Theory and Practical by scoring a minimum of 50% marks (equivalent grade) in the aggregate marks obtained in internal assessment, assignments and final university examination.

4. Attendance Requirement

The attendance requirement shall be a minimum of 80% of the classes in any particular subject.

5. Course Admission and Registration

Admission for courses is done at the beginning of each semester. The academic record of a student is maintained in terms of the grade for each course.

Student will be registered once in the university during his course duration for which he/she shall have to apply for as per the rule of university.

6. Final Examination

At the end of semester, final examination will be conducted by the university, according to the examination rules of the university.

7. The Semester System

The prominent feature of the semester system is the continuous evaluation of performance of student. The credit hour assigned to each course of this program varies depending on theory and practical works. One credit hour theory is equivalent to 16 hours and one credit PSD/Lab practical is equivalent to 48 hours of clinical or laboratory or field activities.

CURRICULUM STRUCTURE OF BPH

FIRST YEAR

FIRST SEMESTER

Course Code	Subjects	Marks (Theory)	Marks (Practical)	Total Marks	Credit Hours
BPA 111	Anatomy and Physiology	50	-	50	3
BPB 112	Biochemistry	50	-	50	3
BPM 113	Microbiology and Immunology	50	-	50	3
BPP 114	Pharmacology and Toxicology	50	-	50	3
PHP 115	Public Health-I	50	-	50	3
LAB 111	Anatomy and Physiology	-	50	50	1
LAB 112	Biochemistry	-	50	50	1
LAB 113	Microbiology and Immunology	-	50	50	1
LAB 114	Pharmacology and Toxicology	-	50	50	1
PSD 115	Public Health-I	-	50	50	1
	TOTAL	**250**	**250**	**500**	**20**

FIRST YEAR

SECOND SEMESTER

Course Code	Subjects	Marks (Theory)	Marks (Practical)	Total Marks	Credit Hours
BPP 121	Pathophysiology and First Aid	50	-	50	3
BPE 122	Entomology and Parasitology	50	-	50	3
PHE 123	Environmental Health-I	50	-	50	3
PHE 124	Basic Epidemiology	50	-	50	3
PHP 125	Public Health-II	50	-	50	3
LAB 121	Pathology and First Aid	-	50	50	1
LAB 122	Entomology and Parasitology	-	50	50	1
LAB 123	Environmental Health	-	50	50	1
PSD 124	Basic Epidemiology	-	50	50	1
PSD 125	Public Health-II	-	50	50	1
	TOTAL	**250**	**250**	**500**	**20**

SECOND YEAR

THIRD SEMESTER

Course Code	Subjects	Marks (Theory)	Marks (Practical)	Total Marks	Credit Hours
PHN 211	Public Health Nutrition-I	50	-	50	3
PHC 212	Communicable & Non-Communicable Diseases	50	-	50	3
PHS 213	Public Health Statisitcs-I	50	-	50	3
PHA 214	Public Health Anthropology	50	-	50	3
PHE 215	Environmental Health-II	50	-	50	3
PSD 211	Public Health Nutrition-I	-	50	50	3
PSD 212	Communicable & Non-Communicable Diseases	-	50	50	1
PSD 213	Public Health Statisitcs-I	-	50	50	1
PSD 214	Public Health Anthropology	-	50	50	1
PSD 215	Environmental Health-II	-	50	50	1
	TOTAL	**250**	**250**	**500**	**20**

SECOND YEAR

FOURTH SEMESTER

Course Code	Subjects	Marks (Theory)	Marks (Practical)	Total Marks	Credit Hours
PHN 221	Public Health Nutrition-II	50	-	50	3
PHE 222	Applied Epidemiology	50	-	50	3
PHS 223	Public Health Statisitcs-II	50	-	50	3
PHS 224	Public Health Sociology	50	-	50	3
PHO 225	Occupational Issues and Management	50	-	50	3
PSD 221	Public Health Nutrition-II	-	50	50	1
PSD 222	Applied Epidemiology	-	50	50	1
PSD 223	Public Health Statisitcs-II	-	50	50	1
PSD 224	Public Health Sociology	-	50	50	1
PSD 225	Occupational Issues and Management	-	50	50	1
	TOTAL	**250**	**250**	**500**	**20**

THIRD YEAR

FIFTH SEMESTER

Course Code	Subjects	Marks (Theory)	Marks (Practical)	Total Marks	Credit Hours
PHP 311	Population Studies	50	-	50	3
PHR 312	Reproductive and Elderly Health	50	-	50	3
PHH 313	Health Promotion and Education	50	-	50	3
PHM 314	Health System Management-I	50	-	50	3
PHR 315	Human Resource Management	50	-	50	3
PSD 311	Population Studies	-	50	50	1
PSD 312	Reproductive and Elderly Health	-	50	50	1
PSD 313	Health Promotion and Education	-	50	50	1
PSD 314	Health System Management-I	-	50	50	1
PSD 315	Human Resource Management	-	50	50	1
	TOTAL	**250**	**250**	**500**	**20**

THIRD YEAR

SIXTH SEMESTER

Course Code	Subjects	Marks (Theory)	Marks (Practical)	Total Marks	Credit Hours
PHM 321	Maternal and Child Health	50	-	50	3
PHM 322	Health System Management-II	50	-	50	3
PHR 323	Public Health Research	50	-	50	3
PHC 324	Community Health Diagnosis	50	-	50	3
PSD 321	Maternal and Child Health	-	50	50	1
PSD 322	Health System Management-II	-	50	50	1
PSD 323	Public Health Research	-	50	50	1
PHC 608	Residential Field Practice	-	100	100	3
	TOTAL	**200**	**250**	**450**	**18**

FOURTH YEAR

SEVENTH SEMESTER

Course Code	Subjects	Marks (Theory)	Marks (Practical)	Total Marks	Credit Hours
PHF 411	Health Finance and Economics	50	-	50	3
PHA 412	Public Health Act and Policies	50	-	50	3
PHM 413	Disaster Management	50	-	50	3
PHR 414	Public Health Research informatics	50	-	50	3
PHR 415	Comprehensive Field Practice	-	50	50	3
PSD 411	Health Finance and Economics	-	50	50	1
PSD 412	Public Health Act and Policies	-	50	50	1
PSD 413	Disaster Management	-	50	50	1
PSD 414	Public Health Research informatics	-	50	50	1
SEM 415	Public Health Seminar	-	50	50	1
	TOTAL	**200**	**300**	**500**	**20**

FOURTH YEAR

EIGHTH SEMESTER

Course Code	Subjects	Marks	Credit Hours
PHI 421	Internship	100	3
PHR 422	Dissertation	100	6
	TOTAL	**200**	**9**

BPH
First Year
First Semester

BPA 111 Anatomy and Physiology

BPH First Year, First Semester

Course Objectives:

To provide basic concept and knowledge on anatomy and physiology with respective systems, structures and functions of different system and organs. At the end of the course, students will be able to:

- Define basic terminologies used in anatomy and physiology
- Describe the structures and functions of different system of human body.
- Describe the structures and the functions of the cells, tissues, organ system and types and relation to each other and the physiological homeostasis.

Course Contents:

Unit-I: Anatomy

1. General Introduction 2 hours

- Definition of anatomical terminologies such as Anterior, Posterior, Superior, Inferior, Proximal, Distal, Extension, Flexion, Abduction, Circumduction, Sagital,Coronal, Palmar, Dorsal and Ventral
- Components of human cell, tissue, organ and their functions

2. Organ Systems

A. G.I. System 3 hours

- Nomenclature of different parts of Gastro intestinal Tract.
- Position of salivary glands and pancreas.
- Identification of position lobes and structure of liver
- Discussion of extent of hepatic biliary apparatus.
- Basic concept of peritoneal folds.

B. Musculo Skeletal 2 hours

- Name and identification of appendicular and axial skeleton.
- Different types of joints and their characteristic.

C. Neurosensory System 3 hours

- Different components of nervous system.
- Identification of different parts of the brain and coverings.
- Extent and covering of spinal cord.
- Main tracts of spinal cord.
- Cranial nerves and their area of supply.

D. Respiratory System 2 hours

- Enumerate different parts of respiratory system.
- Identification of paranasal air sinuses, larynx, trachea and bronchus.
- Identification of different parts of lungs and pleura.
- Identification of different parts of bronchial tree.

E. Cardiovascular System 4 hours

- Identification of parts, chambers and valves of heart.
- Extent and braches of abdominal aorta, external carotid artery and internal iliac artery.
- Identification of the extent of Axillary artery, Brachial artery, Radial artery, Ulner artery, Femoral artery, Poplitial artery, Anterior and Posterior tibial arteries, Dorsalispedis.
- Identification of Superior venacava (SVC), Inferior Venacava,(IVC), Dural venus sinuses.

F. Lymphatic System 2 hours

- Definition of lymph, Parts of Lymphatic System, Axillary group of lymph nodes, Inguinal group of lymph nodes, Pre and Para aortic lymph nodes.

G. Reproductive System 2 hours

- Nomenclature of different parts, situation and extent of male and female genital organs.

H. Urinary System *2 hours*

- Identification of different parts of urinary system.
- Explanation of parts of kidney in a coronal section.
- Identification of different parts of nephron.
- Identification of different parts of urinary bladder.

I. Endocrine System 2 hours

- Enumeration of different endocrine glands, their position, secretions, and their functions.

Unit–II: Physiology

1. General Physiology 2 hours

1. Nomenclature of different components of animal cells and their function.
2. Different tissue of body and their characteristic.
3. Definition of body fluids and electrolyte balance, classification and their composition.

2. Human System

A. G.I. System 3 hours

- Mechanism of mastication, deglutition, digestion, absorption, defecation and vomiting.
- Activation of different enzyme system on smell, ingestion and hunger.
- Function of different glands involved in digestion i.e. tonsils, buccal glands, salivary glands, gastric glands, pancreas, liver etc.
- Peristalsis and regurgitation.

B. Cardiovascular System and Blood 6 hours

- Composition and functions of blood.
- Definition of haemopoiesis and disorders of blood components.
- Definition of blood group and mention its importance.
- Clotting factors and the step of coagulation.
- Functions of spleen.
- Functions of heart.
- Pulmonary and systemic circulation cardiac cycle and hearts sounds.
- Definition of blood pressure and explain the mechanism of its regulation.
- Correlate physiological aspects of the ischemic heart disease, hypertension, atherosclerosis.

C. Respiratory System 3 hours

- Function of nose, paranosal sinuses, nasopharynx, trachea, bronchus and alveoli of the lungs.
- Surfactants of lungs.
- Gasses exchanges and transport of gases in blood.
- Lungs volume and change in volume in different respiratory activities.
- COPD, Dyspnoea, PND and Orthopnoea.
- Mechanism of coughing.

D. Musculo Skeletal 2 hours

- Muscles contraction and excitation.
- Movement of different joints i.e. shoulder, hip, knee, ankle, elbow, wrist etc.
- Co-ordination of movement.
- Cellular respiration, dehydration and contraction.

E. Nervous System 2

- Function of different parts of brain and spinal cord and its coverings.
- Function the different cranial nerves.
- Function of special senses.
- Function of sympathetic and para sympathetic nervous system.
- Correlate physiological aspects of meningitis, encephalitis and epilepsy.

F. Urinary System 2

- Function of different parts of kidney and urinary tract.
- Mechanism of formation of urine and micturation.
- Correlate the physiological aspects of polyuria and the renal stones.

G. Endocrine and Reproductive System 4

- Main functions of different endocrine glands.
- Physiological aspect of Goitre and Diabetes mellitus.
- Functions of male and female genital organs.
- Physiology of menstruation.
- Basic concepts of spermatogenesis, ovulation and pregnancy.
- Physiological basics of contraceptives.

References:

1. Waugh A., Grant A. *Ross & Wilson's Anatomy and Physiology in Health and Illness*, 9th Edition. Churchill Livingston, London. 2001.
2. Chaurasia. *Handbook of Human Anatomy*. CBS Publication.
3. Anatomy and Physiology for Nurses
4. Guyton AC & Hall JE. *Guyton Human Physiology and Mechanisms of Disease*.
5. Hartcourt Publishers Limited, 1996.
6. Williams PL (Ed). *Gray's Anatomy*, Churchill Livingstone, London.
7. Hamilton Systemic Anatomy

BPH First Year, First Semester

Course Objectives:

To make familiar with the basic laboratory skills on anatomy and physiology.

Course Contents

1. Microscope, functions of its different parts and observation technique.
2. Organization of human body- Skeletal (Articulated and disarticulated)
3. Gross anatomy of the different systems of the body (Dummy Models, Charts)
4. Histology of cell, muscle, liver, spleen, stomach, duodenum, pancreas, skin, esophagus, trachea, lung, testes, vas difference, ovary, uterus, Fallopian tubes, Spinal cord, Kidney, Cerebrum.
5. Blood cells and their total count and blood grouping
6. Measurement of blood pressure
7. Measurement of respiratory volume and capacity
8. Color tests of carbohydrates, proteins and fats

BPB 112 Biochemistry
BPH, First Year, First Semester

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.

- 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 hrs

(Introduction and importance of Biochemistry for public health professionals)

Unit II: Physiochemical Phenomena 4 hrs

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 hrs

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: Bionutrients **20 hrs**

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 **10 hrs**

Digestion, Absorption, and Metabolism of Carbohydrate, Entry of glucose into cell, Introduction and importance's of Glycogensis, Gycogenolysis, Gluconeogenesis, Glycolysis, Tricaboxylic 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 hrs**

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 **4hrs**

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

References

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

LAB 112 Biochemistry

BPH, First Year, First Semester

Course Outcomes

By the end of the course, students should be able to:

- identify different equipment/instruments used in biochemistry lab
- perform selected biochemistry laboratory tests

Course Contents

1. Identification and use of glassware's and equipment's used in biochemistry Laboratory.
2. Preparation of different types of solution (molar solution, molal solution, percent solution –w/w, w/v, normal solution, standard solution, saturated solution)
3. Handling and operation of colorimeter.
4. Handling and operation of pH meter.
5. Determination of pH by using pH strip and pH meter.
6. Collection of urine and examination of by using urine strip method.
7. Demonstration and interpretation of urine pregnancy test by HCG method.
8. Qualitative examination of carbohydrates and proteins/amino acids.
9. Characterization tests for lipid.
10. Separation of serum and plasma.
11. Demonstration and interpretation of quantitative determination of sugar in serum by using GOD/POD method.
12. Demonstration and interpretation of quantitative determination of protein in serum.
13. Demonstration and interpretation of quantitative determination of lipid in serum.

PBM 113 Microbiology and Immunology

BPH, First Year

First Semester

Course Contents

Unit I: Introduction to Microbiology **2 hrs**

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

Unit II: Introduction to general bacteriology 8 hrs

- 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 hrs

- 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 hrs

- 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 hrs

- 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, Arbovinuses, Retrovirus-HIV, Rotavirus, Hepaduaviruses, Coronaviruses, Picornaviridae-Polio, Rhabdoviridae-Rabies, Adenovirus, Orthomyxoviridae- Influenza, Paramyxoviridae- Measles)

Unit VI: Mycology 2 hrs

- Introduction, definition, characteristic and classification of fungi.

Unit VII: Immunology 8 hrs

- 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.

References

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 ed.. 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 Livingston, 1994
7. Ivan Riot: Essential Immunology, ELBS-9th Edition, 1999
8. Topley & Wilsons: Bacteriology, Virology & Mycology
9. Bailey & Scott's: Diagnostic Microbiology

LAB 113 Microbiology and Immunology
BPH, First Year, First Semester

Course Outcomes

By the end of this course, students should be able to:

- Handle the laboratory equipment, procedure, and reagents,
- Collect, transport, store and preserve different samples used in microbiology laboratory,
- Prepare and demonstrate different media, and
- Perform selected microbiological and immunological tests.

Course Contents

1. Observation & identification of various parts of compound microscope and their function.
2. Observation and uses of laboratory equipment.
3. Selection, collection, transportation, storage, preservation and processing of specimens (blood, urine, stool, sputum, pus, nasal/throat swab and skin smear) for identification of common diseases of public health concern.
4. Perform Gram stain from the isolated bacterial sample.
5. Perform Acid/Alkali Fast Bacilli stain from the given sputum sample and skin smear.
6. Demonstration of different types of media in microbiology.
7. Demonstration of different methods of culture of bacteria and fungi in vitro.
8. Demonstration of the coliform from the given water sample using rapid techniques (e.g. MPN)
9. Demonstration of bacterial load by MBRT (Methylene Blue Reduction Time) test of the given milk sample.
10. Demonstration of organisms present in the air by different accepted technique (active sampling with surface air system and passive sampling with settle plate method)
11. Perform serological test by Rapid kit method (HIV, HBsAg, ASO).
12. Perform Lactophenol cotton blue from given fungal specimen.
13. Demonstration of ELISA test
14. Perform PAP smear test

BPP 114 Pharmacology and Toxicology

BPH, First Year, First Semester

Course Objectives

The purpose of the course is to develop the understanding of pharmacy, pharmacology and toxicology with added lens of public health practice focusing on public health implications.

Course Outcomes

By the end of this course, students should be able to:

- Describe the basic terminologies related to public health pharmacy, pharmacy, pharmacology and toxicology,
- Illustrate major aspects of manufacturing, quality control, use and regulation of medicines,
- Explain dosage and consumption, actions, reactions, use and contraindications of drugs and medicines of free and essential list,
- Clarify the basic concepts of toxicology and its implication in public health, and
- Enumerate the concepts and importance's of self medication and antimicrobial resistance in public health.

Course Contents

Unit I: Pharmacy **16 hrs**

- Introduction (Definition of Pharmacy, Pharmaceutical care, Pharmacotherapy, Pharmacoepidemiology, Pharmacoeconomics; concept, definition and classification of drug/medicines)
- Public health pharmacy (introduction, relationship between public health and pharmacy and macro and micro-level activities of public health pharmacy)
- Basic Principles **(**Different finished dosage forms, packaging and specialized pharmaceutical devices; basic principles of pharmaceutical compounding and manufacturing; basic concept of community pharmacy, hospital pharmacy and clinical pharmacy; and importance of community pharmacy; prescription, dispensing and counseling)
- Quality Control (date of manufacture and expiry date of drugs, handling and medicine storage; vaccines and cold chain; concepts of GMP, GLP and GCP)
- Rational use of medicines (provider, consumer and regulatory perspectives)
- Risk of self-medication practices
- Pharmacopeia and Formulary (concept of pharmacopeia, IP, BP, USP, Nepalese National Formulary)
- Drug Regulations of Nepal (drug policy, Drug Act and its amendments , GPP
- guidelines, Hospital Pharmacy guidelines, Standard Treatment Guidelines/Protocols)

Unit II: Pharmacology **16 hrs**

- Introduction (principles of pharmacokinetics, pharmacodynamics and pharmacogenomics Principles of geriatric prescribing, pediatric prescribing and prescribing for pregnant women)
- Live saving, essential and OTC drugs (Life saving drugs: classification, indications and contraindication of important life saving drugs; concept of essential drug and free drug lists (health facility-wise) and its implementation in Nepal; OTC drugs: concept and list)
- Drugs used according to standard treatment guidelines/protocols in TB, Malaria, Kala-azar, Leprosy, ARI, Diarrheal diseases; HIV/AIDS, COPD, Diabetes, Hypertension, common infections
- Special consideration on Antibiotic therapy (general concepts of anti-microbial therapy, antibiotic: use, misuse, and resistance; use of antibiotics in food and animals and its public health implications)
- Organizations working in areas of medicines (DDA, Pharmacy Council, WHO, consumer forums, INRUD, NCDA, NPA)
- Pharmacovigilance

Unit III: Toxicology **16 hrs**

- Introduction (definition, scope and application of toxicology)
- Terminologies (Toxin, Poison, Xenobiotic, Risk, Hazard, Exposure, Lethal dose etc.)
- Basic Principles (toxin and toxicity, Toxicity value, Acute and Chronic toxicity, Poison, Toxicity categories- European Protection Agency (EPA), WHO, personal protection equipments, Causes of poisoning, Poison Prevention, Case studies, Factors influencing toxicity.
- Diversity of Toxicology:

  (Occupational/industrial toxicology: definition, different permissible values, implication in human health, determination of acceptable exposure limit; Environmental toxicology: air, water, and soil pollution; public health burden due to environmental pollution; Forensic toxicology: definition, scope, limitation and principles of ascertaining death by poisoning; Clinical toxicology: definition, initial approach to poisoned patients, mechanism of action, clinical effects and management of poisoning due to Organophosphates, Organochlorines, pyrethrins, phosphides, paracetamol, benzodiazepines, barbiturates, opiates, Tricyclic antidepressants,, Iron, Datura, Snake bites, Bee/wasp/hornet sting, Scorpian bites)

References

1. Rees JA, Smith I and Watson J (Editors) *Pharmaceutical Practice,* (5th Ed.) Churchill Livingston, Elsevier, London, 2014
2. Katzung B and Trevor Anthony: *Basic and Clinical Pharmacology,* (13th Ed.) Lange, Medical Books. McGraw-Hill, New York, 2015
3. Klaassen CD (Editor): *Casarett and Doull's Toxicology: The Basic Science of Poisons,* (8th Ed.) McGraw Hill: New York; 2013.
4. Olson KR (Editor): *Poisoning and Drug Overdose,* (6th Ed.) Lange, Medical

Books. McGraw-Hill, New York, 2012.
5. Wall Chart on the Management of Commonly Encountered Poisons in Nepal, 2000
6. Handbook on management of Pesticide Poisoning published by Plant Protection Division, Ministry of Agriculture, Government of Nepal
7. National List of Essential Medicines, 2011
8. 19th WHO Model list of Essential Medicines, WHO, 2015
9. Drug Act, Government of Nepal, 1978
10. National Drug Policy, Government of Nepal, 1995
11. National Good Pharmacy Practice Guidelines Draft 2005.
12. Department of Drug Administration: www. dda.gov.np
13. World Health Organization: www.who.int

LAB 114 Pharmacology and Toxicology
BPH, First Year, Second Semester

Course Outcomes

By the end of the course, students should be able to:

- Demonstrate proper handling of instruments in pharmacy and pharmacology lab,
- Prepare basic extemporaneous preparations,
- Differentiate rational and irrational prescriptions,
- Counsel the non-adhered and non-compliant patients,
- Manage organophosphorus, organochlorine, paracetamol, benzodizepin, opoid poisoning,
- Manage dhatura and ganja poisoning, and
- Write case reports.

Course Contents

1. Handling basic instruments in pharmacy and pharmacology laboratory
2. Basic extemporaneous preparations of pharmaceutical products
3. Pharmaceutical product labeling, transportation and storage
4. Collection and analysis of prescriptions and report writing
5. Case studies in clinical toxicology and report writing
6. Collection of prescriptions and simulated practices (adherence support (counseling and provision of compliance aids); report writing on irrational use of drugs etc.)

PHP 115 Public Health-I

BPH, First Year, First Semester

Course Objectives

The purpose of this course is to provide students with an introductory knowledge of public health. In particular, this course aims at developing the basis for the students so that they can develop their attitude and perception to become professionals of public health in the future. It is also aimed at realizing the prospective public health scientists their roles and responsibilities.

Course Contents

Unit I: Concept of Health and Disease **18 hrs**

- Concept of health and disease (concept and definition of health, wellbeing, illness, sickness and disease; philosophy of health; concept and definition of disease; changing concepts of health; dimensions of health; spectrum of health; iceberg phenomenon of disease; responsibility for health: Individual, community, state and international)
- Concept of causation (germ theory of disease; epidemiological triad; multi-factorial causation; web of causation; natural history of disease: pre-pathogenesis and pathogenesis phase)
- Determinants of health
- Prevention, its levels in line with phases of disease concurrent to natural history
- Concept of modes of intervention in different levels of prevention
- Burden of disease (concept of burden of disease; measurements used in burden of disease: DALY, QALY, YLL, YLD)
- Indicators of Health (Concept and characteristics of health indicator; Different types of mortality and morbidity indicators: mortality Indicators-crude death rate; age-specific death rate; infant mortality rate; maternal mortality rate and ratio; Morbidity indicators: incidence and prevalence)

Unit II: Concept of Public Health 10 hrs

- Definition of Public health
- History of public health in global and Nepalese context
- Concept of preventive medicine, community medicine, clinical medicine, social medicine, community health
- Application of public health from medical model, spiritual model and holistic model

Unit III: Role of Public Health 8 hrs

- Public health functions and sub-functions
- Core competencies of public health professionals
- Specialty/scope of public health

Unit IV: Overview of Public Health Issues 12 hrs

- Global public health issues (WHO listing)
- Concept, burden, prevention and control measures to common public health issues/problems in Nepal (vaccine preventable diseases; water borne diseases; reproductive tract infections; mental health problems; drug and substance abuse; gender based health issues; oral health; eye health issues; non communicable diseases; road traffic accidents)

References

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.int

PSD 115 Public Health-I
BPH, First Year, First Semester

BPH
FIRST YEAR
SECOND SEMESTER

BPP 121 Pathophysiology and First Aid
BPH, First Year, Second Semesters

Course Objectives:

To provide basic concept and knowledge on pathological changes, abnormalities and first aid management. Upon the successful completion of the course, students will be able to:

- Describe the basic pathological changes in the cells, tissues, organs and the system of the body.
- Describe lab methods of diagnosis and understand handling of basic instruments
- Discuss different life threatening casualty conditions and apply first aid skills to save life and promote health and recovery of the patient.
- Selection, collection, preservation, transportation and processing of specimens

Course Contents:

Unit-I: Pathophysiology

1. Introduction **7 hours**

- Basic Terminologies in Pathology.
- General Concepts of Tissue Injury, Inflammation, Necrosis, Thrombosis, Embolism, Wound Healing, Shock, Oedema, Neoplasia, Hypersensitivity Reactions, Immune Deficiency Disorder (Congenital and acquired- HIV/AIDS), Immunity and Genetic Disorders

2. Human System

A. Gastrointestinal System **3 hours**

- Concepts of Gastritis, Peptic Ulcer, TB Intestine, Appendicitis, intestinal obstruction, Carcinoma of Stomach, Hepatitis, Cirrhosis of Liver, Cholecystitis and Cholelithiasis.

B. Musculo-Skeletal System and Skin **2 hours**

- Basic Concepts of Fractures, Arthritis, Oesteomyelitis, Leprosy, Scabies and deficiency disorders in skin.

C. Cardiovascular System **2 hours**

- Basic Concepts of Rheumatic Carditis, Myocardial Infraction, Hypertension, Atherosclerosis, Heart Failure, Anemia, Leukemia, Hemophilia, Idiopathic Thrombocytopenic Purpura (ITP)

D. Respiratory System **3 hours**

- Basic Concepts of Tuberculosis, COPD, Pneumonia, Carcinoma of Lung.
- Occupational hazards and their effects on human bodies

E. Neurosensary System and special senses. **2 hours**

- Concepts of Meningitis, Epilepsy, Encephalitis, Conjunctivitis, Trachoma, Ratinoblastoma, Xerophthalmia, Actue Otitis Media and CSOM.

F. Renal and Electrolyte System **2 hours**

- Renal Failure, Nephritis, Nephrotic Syndrome, Renal Stones, UTI.

G. Reproductive and Endocrine System **3 hours**

- DUB, Abortions, Ectopic Pregnancy, Benign Prostatic Hyperplasia (BEP), Carcinoma of Cervix.

- Nodular Goiter, Diabetes Mellitus.
- Different Causes of Breast Lump
- Sexually transmitted infections (STI)

Unit-II: First Aids **24 hours**

- First aid measures in poisoning (insecticides, rodenticides, drugs, alcohols, plants, animal bites, sting)
- Shock, type of shock, and first aid measures
- First aid in snakebites
- Foreign body in ear, nose, throat and eyes and first aid
- Classification of injury and first aid in injury
- Classification of hemorrhage and first aid to control of external bleeding
- Burns, its percentage and first aid measure to thermal and chemical burns
- Description of measures to manage the case of frostbite
- Identification of the fractured bones and dislocations and its first aid measures
- Heatstroke and first aid measure
- Dangers of rabid animal bites and its first aid measure
- First aid measure in drowning
- First aid measures in acute mountain sickness
- First aid measures in pregnancy, delivery and newborn

References:

1. Baker FJ. *Introduction to medical laboratory technology.* (ELBS).
2. Cheesbrough M. Medical laboratory manuals for developing countries, Vol. I & II, ELBS, 1996.
3. Textbooks of First Aid Recent Edition
4. Robins, Cotran and Kumar. Pathologic Basis of Disease, 7th Edition. Churchill 4. Livingston, 2002.

LAB 121 Pathophysiology and First Aid
BPH, First Year, Second Semesters

Course Objectives:

To familiarize with the basic laboratory skills in pathology and to make able to apply theoretical knowledge on the first aid in real situation

Course Contents:

1. Handling of lab specimens and instrumentation
2. Introduction to investigations done in pathology lab: Biopsy, Fine Needle Aspiration Cytology (FNAC), Exfoliative Cytology (PAP smear), Frozen Section Biopsy, Immune Histo/Cytochemistry
3. Specimen selection, collection, transportation and processing of specimens.
4. Demonstration of application of first aid in emergencies such as injuries traffic accident, poisoning, snakebites, drowning, bleeding, fractures, rabid animal bites, and acute mountain sickness etc.

BPE 122 Entomology and Parasitology

BPH, First Year,Second Semester

Course Objectives

The purpose of this course is to provide students with an introductory knowledge of the parasitology and entomology. In particular, this course focuses on the common areas: introduction of entomology, arthropods, rodents and mammals, diseases and health hazards, general parasitology, protozoology, helminthology, techniques of sample handling. The course also attempts to enable students to describe the role of importance of understand the role, challenges, and opportunities of public health for enhancing the population health status.

Course Outcomes

By the end of this course, students should be able to:

- Identify public health importance arthropods and other micro-organisms: vectors, carriers, pests and parasites, bacteria as well viruses,
- Describe epidemiology of vector borne diseases in Nepal as well in South East Asia,
- Explain the control measures of common vectors and carriers, and
- Illustrate integrated vector management (IVM) and integrated pest management (IPM) programs.

Course Contents

Part I: Entomology

Unit I: Introduction to entomology **2 hrs**

- Concept of entomology in Public health
- Importance arthropods in public health
- Introduction and classification of arthropods with reference to public health.

Unit II: Arthropods **14 hrs**

(General description, external morphology, biology, public health importance and control measures of following arthropods):

- Arachnids: scorpions, spiders, ticks, mites.
- Non-dipterous insect: lice, fleas, bugs, and cockroach.
- Dipterous insects: myiasis and myiasis causing fly, phlebotomine-sand flies, simulium-black flies
- Mosquito- anopheline, culicine, aedes, mosquito as a serious biting nuisance to human.

Unit III: Introduction to Rodents and Mammals **3 hrs**

- Public health importance, control measures of rodents and mammals.

Unit IV: Diseases and Health Hazards **5 hrs**

- Diseases and health hazards associated with arthropods and rodents.
- Different methods of controlling of vector and rodents.
- Introduction to integrated vector management and introduction to integrated pest management
- Classification of insecticide and its mode of action.
- Problem of insecticide resistance in vectors and its resistant management.

Part II: Parasitology

Unit V: General Parasitology **4 hrs**

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

Unit VI: Protozoology **9 hrs**

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

Unit VII: Helminthology **9 hrs**

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

Unit VIII: Techniques of Sample Handling **2 hrs**

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

References

1. Fenemore, P.G. and Prakash, A. Applied Entomology. New Age International Publishers. Gillot, C. Entomology. Plenum Press, New York.
2. Metcalf, R.L. and Luckmann, W.H. Introduction to Insect Pest Management.. John Wiley & Sons, New York
3. Askew R.R.(1971). Parasitic Insects. American Elsevier Publication Co. New York
4. Richards, O.W. and Davies, R.G. IMMS' General Textbook of Entomology. vol. 1. BI Publications Pvt. Ltd., New Delhi.
5. Parija, S.C. Review of Parasitic Zoonoses. A.I.T.B.S. Publishers and Distributors, Delhi.
6. 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.
8. Hand Book of integrated vector management- WHO Guidelines 2012.
9. Hand book of Medical Entomology.
10. Panikar CKJ. Textbook of Medical Parasitology, 6th Eds, Jaypee Brothers, Medical Publishers, 2007.

LAB 122 Entomology and Parasitology
BPH, First Year, Second Semester

Course Outcomes

By the end of the course, students should be able to:

- Demonstrate morphological structures and other related features of insects of public health importance,
- Demonstrate the skills to identify, preserve, and diagnose the medically important arthropods and parasites in the laboratory,
- Collect various insects and parasites through survey and related methods, and
- Develop report and submit.

Course Contents

1. Collection of insects of public health importance (scorpions, spiders, ticks, mites, lice, fleas, bugs, cockroach, housefly, sand-fly, black-fly and mosquitoes) and their morphological studies
2. Display (pictorial/video) life cycle of mosquitoes
3. Preparation of slides and identification of ova, cyst, trophozoites of parasites of public health importance from stool specimen.
4. Study of museum specimens of helminthes, platy-helminthes and nematodes.
5. Maintaining practical logbook by students

PHE 123 Environmental Health-I
BPH, Second year, Second semester

Course Objectives:

To clarify the concept and application of environmental health that can support in understanding the relationship between environment and human health. At the completion of the course students shall be able to:

- Understand the concept of environmental health.
- Explore the environmental health problems of Nepal
- Clarify the role of water resource and solid waste in promoting public health

Course Contents:

Unit-I: Introduction to Environmental Health 5 hours

- Concept and application of environmental health
- Scope of environmental health
- Components of environmental health

Unit-II: Environment, Biology and Ecology 8 Hours

- Concept of environment, biology and ecology.
- Human-environment interaction and human impact on ecosystems.
- Ecosystem approach
- Ecosystem approach to human health and diseases
- Agro ecosystem
- Links between agro ecosystem and human health
- Concept of human well-being

Unit-III: Common Environmental Health Problems of Nepal 20 hours

- **Environmental Problems in Rural Areas**
  - Poor sanitation and hygiene
  - Indoor air pollution
  - Unsafe drinking water
  - Flooding and drought
  - River siltation
  - Loss of Biodiversity
  - Deforestation
  - Soil erosion
  - Desertification
- **Environmental Problems in Urban Areas**
  - Air pollution
  - Industrial pollution
  - Water pollution

Unit-IV: Biodiversity and Its Conservation 8 Hours

- Basic concepts and importance of biodiversity
- Biodiversity and biotechnology.
- Challenges to the preservation of biodiversity.

- Biodiversity and human health
- Conservation and its impact on human health

Unit-V: Water Resources Management **14 hours**

- Types, sources and effects of water pollution
- Rivers and ground water pollution
- Sources of water supply and availability in Nepal (rural and urban)
- Human health and water quality
- Water and water related diseases.
- Water purification, WHO standard and prevention and control measures.
- Liquid waste management

Unit-VI: Solid Waste **9 hours**

- Solid waste production and disposal
- Resource recovery from solid waste (including human excreta)
- Types, sources and effects of hazardous wastes
- Control and management of hazardous wastes

Unit-VII: Air Pollution **8 Hours**

- Types and sources of air pollution
- Effects of air pollution on biological system
- Effects of air-pollution on human health
- Effects of air-pollution on Ozone layer and global climate
- Management of air pollution

References

1. Beacon Press, MOPE, State of the Environment of Nepal, Kathmandu: Ministry of Pollution and Environmental Nepal 2000.
2. FAO/WHO. Health and Environment in Sustainable Development *WHO/EHG/97.8* 1997
3. Miller, Tyler, Environmental Science. USA: Wadsworth Inc1988.
4. MOPE/ICIMOD/UNEP (2001*), Nepal: State of the Environment Report* 2001. Kathmandu: UNEP/ICIMOD
5. Ojha. S. *Watawarniya swasthya re sarsaphai*, Kathmandu: Health Learning, Material Centre, BS 2046.
6. Sloan, WM *Site selection for new hazardous waste management facilities*. WHO1993.
7. WHO. *WHO commission on health and environment*. Report of the panel on food and agriculture. Geneva: WHO1992

LAB 123 Environmental Health-I

BPH, Second year, Second semester

Course Outcomes

By the end the course, students should be able to:

- Prepare survey tool (with supervision and assistance of teacher) for environmental problems, effects on climate change, biodiversity, social and cultural environment of people,
- Execute survey tool (with supervision and assistance of teacher) in nearby community, and
- Prepare a report and submit in given format (with supervision and assistance of teacher).

Course Contents

1. Classroom activities in group to prepare survey tool including equipments
2. One day community visit: Wetlands/ community forest lands/grass lands/landslide/soil erosion/ eco-village/organic village
3. Data processing and writing a report and submission for final practical evaluation.

PHE 124 Basic Epidemiology
BPH, Second year, Second semester

Course Objectives:

To deliver basic knowledge on epidemiological concepts, approaches, and methods that can be used for the planning, control, management and evaluation of diseases and systems for the improvement of community health issues. Upon the successful completion of the course, the students will be able to:

- Describe and apply epidemiological concepts and strategies in planning and implementing health programs.
- Describe and generate epidemiological information for the effective management of health problems.
- Calculate epidemiological frequencies measures and apply these to manage and evaluate health program.

Course Contents:

Unit-I: Meaning, Types, Scope and Application of Epidemiology 10 hours

- Definition and concept of Epidemiology
- Historical development of Epidemiology
- Aims, scope and application of Epidemiology
- Distribution of Disease: Time, person and place

Unit-II: Terminology used in Epidemiology 10 hours

- Terminology used in epidemiological design
- Terminology used in disease epidemiology

Unit-III: Health and Epidemiology 14 hours

- Concept of health and use of epidemiology.
- Relationship between disease and epidemiology
- Epidimiology and disease interventions (communicable and non-communicable)
- Critical issues in disease, causations and interventions

Unit–IV: Use of Epidemiology in Public Health 14 hours

- Relationship between epidemiology and public health
- Referencing epidemiological studies in public health

References:

1. Beaglehole R, Bonita R, Kjellstrom T. *Basic Epidemiology*. World Health Organization, Geneva, 1993.
2. Gordis L. *Epidemiology,* Second Edition, WB Saunders Company, Aharcourt Health Sciences Company, Philadelphia, 2000.
3. Heninkens CH, Buring JE. *Epidemiology in Medicine*, Lippincott Williams and wilkins, a Wolters Kluwer Company: 1987.
4. MacMahon B, Trichopoulos D. *Epidemiology: Principles and Methods*, Second Edition. Boston: Little, Brown, 1996.
5. Mahajan BK. *A Text Book of Preventive and Social Medicine*
6. Park JE and Park K. *Text book of social and preventive medicine*, 2000
7. *Principles of Epidemiology*, 2nd Edition, An Introduction to applied Epidemiology and Biostatistics. US Department of Health and Human Service, CDC, Atlanta Georgia.
8. Rothman KJ, Greenland S. *Modern Epidemiology*, 2nd Edition, Lippincott- Raven publishers: 1998.
9. Rothman KJ. *Epidemiology: An Introduction*. Oxford University Press, 2002

PSD 124 Basic Epidemiology
BPH, First Year, Second Semester

PHP 125 Public Health-II

BPH, First Year, Second Semester

Course Introduction

The course offers an opportunity to develop a holistic understanding of public health, its functions and scope. The course attendants will learn the historical development and methodology of public health and the public health care. The course will also apply the theoretical and conceptual knowledge to bring changes in the health of community. In the light of principles of Primary Health Care, the course is expected to help the students to understand and internalize the dynamics of community development facilitating the integration of health sector with other sectors.

The course consists of the following components

a. Fundamentals of public health

b. Primary Health Care (PHC) and its strategies (Community organization and community participation and Community development)

c. Public Health service delivery (theory and field observation)

Course objectives

Objective of the course is to help the students to understand, describe and explain

1. Concept of health and disease, spectrum of health, prevention of disease and promotion of health
2. Historical background and development, principles, and strategies of primary health care (PHC)
3. Application of primary health care and health services in Nepal
4. Current public health transition

Unit 1. Primary Health Care (PHC) 28 hrs

a. Historical background of Primary Health Care

Investment on health and outcomes

Inequality in health

Success stories in health in some countries

People's efforts to address health problems

b. Alma-Ata Conference on Primary Health Care

Concept, principles and strategies of Primary Health Care

Basic components of Primary Health Care

Declaration of Alma-Ata Conference

Challenges and obstacles to PHC: selective PHC, cost recovery of health services, Structural adjustment programs and investing in health care.

Unit 2. Operational approaches and strategies of Primary Health Care 10 hrs

a. Community Health Development

Community Organization: concept, principles, processes and importance

Role of health workers in community organization Application of community organization theory and practice in community health program

Definition of development: concept and goals of community development

Health and different economic, political, social aspects of development Ways of viewing community development: as a process, method, program, and movement Techniques of community development and their application in public health programs: external agent technique, internal resource mobilization technique, multiple agent technique

b. Feature of community development in Nepal and their application in health programs

Emphasis on all round integrated development, rural development Principles of mobilization of local resources /sustainable development Participation of the Village Development Committees, role of health workers, NGOs, CBOs and INGOs in community health development Poverty alleviation Gender and social inclusion

c. Community Participation in Community Health Service

Concept of community participation with special reference to health service delivery and utilization

Levels of community participation: compliance, collaboration Concept of community empowerment and local control Forms and process of community participation in health programs

Involvement of communities in health service delivery and utilization process, participation in phases of resources identification, health needs identification, planning health program, implementation, monitoring and assessment

Enabling factors for health workers related to Community Participation

communication skills: Interpersonal and group communication

process of conducting meetings, discussions and decision making

skills of involving community members in implementing health program

d. Group dynamics and leadership

i. Group dynamics Concept of group dynamics Propositions about groups Natural and planned formation of groups Stages of growth of a group Group roles Group problems and their effects on community health programmes – apathy or non participation, conflict, hip-pocket decision and hidden agenda Ways of reducing group problems

ii. Leadership Concept of leadership Types of leaders Techniques of identifying leaders Role of community leaders in community health programme Health workers' relationship with leaders and its impact on community health programme

e. Resource mobilization

Technique of involving community members in identifying resources available in the community for health programs

Mobilization of existing health committees

Unit 3. Public health service delivery 10 hrs

Concept of Health service delivery

Curriculum of BPH – Year one 43

Various level of health service delivery in Nepal

Various approaches of health service delivery in Nepal Role of the District Public Health Office

Health work forces in Nepal

Concept and scope of curative, preventive and promotional health as defined in national health policy

Teaching Learning Methods

Teaching learning methods of this course include didactic lectures, seminar, group work, discussion in class room setting.

Observation visit of health institutions and facilities: Hospital, PHCC, HP, SHP, urban health clinics, to learn about the DOTS clinics, Fertility care services, Maternal and child health clinics and relevant organizations, Different Divisions of Department of Health Services, UN Agencies

Reference Materials

1. Dixit H. "The quest for health" Educational Enterprise.kathmandu, second edition.

2. Gartoulla Ritu Parsad “An introduction of Medical Sociology and Anthropology” RECID\N.Kathmandu 1998.

3. Gartoulla Ritu Parsad. “Therapy pattern of Conventional Medicine,” RECID\N Kathmandu. 1998.

4. Hale C.Shrestha IB. Bhattacharaya A “Community Diagnosis” HLMC1997

5. Lal .Ramavadar . “Community Development: Principles, Practice and problems” Bookland Private Ltd.

6. Oakely,Peter “Community involvement in health development,an examination of the critical issues”WHO,Geneva, 1989.

7. Pradhananga Y.P. “Samudaya vikashma swastha Pakshya.

8. Pradhan,Hari Bhakta .A Text book of health Educational Enterprises,Kathmandu.

9. Ramchandran ,L and Dharmaligam,T “ Text Book of Health Education ,” Bikash publishing House Pvt.Ltd. 1983.

10. Ross M.G. Community Organization “Harper and Row ,1967.

Curriculum of BPH – Year one 44

11. Shrestha and Pradhananga “Samudaya Swsthya Shikshykao Rooprekha”Kathmandu institute of Medicine, 1986.

12. Cartright D and Zander A “Group Dynamic”. 13. Park JE and park K. “Text book of social and preventive medicine ,” 20th edition 2002.

BPH
Second Year
Third Semester

PHN 211 Public Health Nutrition-I
BPH, Second Year, Third Semester

Course Objectives

The purpose of the course is to acquire essential knowledge on food, nutrient and selected areas of nutritional science including balanced diet, food fads. The course also intends to uplift the knowledge and understanding of food hygiene and protocols to food fortification.

Course Description

The course, under Basic Health Science strand, covers the different areas of food/nutrition science including food hygiene, balanced diet, food fads and adulteration. The course provides the scientific background for requirements of nutritional elements at various stages of life, nutritional problems due to excess and lacking of associated elements, and their assessments.

Course Outcomes

By the end of this course, students should be able to:

- Describe with their types- food science and nutrition
- Enumerate different types of malnutrition, their causes and remedy as well as preventive measures
- Assign different values of macro and micronutrient for different age group people
- Calculate energy requirements of different age group people
- Assess nutritional status

Course Contents

Unit I: Introduction of Food Science and Nutrition **8 hrs**

- Concept and definition of food and nutrition
- Source, classification and nutritional values of common foods
- Nutrients (classification, function, excess and deficiency, daily requirements)

Unit II: Food Hygiene and Safety 10 hrs

- Food hygiene and safety (introduction, principles)
- Food Safety (production, transportation and storage)
- Food hygiene (milk, meat, egg, fish, fruits and vegetables)
- Food adulteration (Introduction, types, causes, health effect, control measures)
- Food additives (introduction, types, health effect)
- Food fortification (introduction, importance, advantages, types, WHO/FAO guidelines)
- Scope of food science and nutrition in public health

Unit III: Nutrition in Lifecycle 10 hrs

- Introduction to energy requirements and energy balance.
- Recommended Dietary Allowance (RDA): concept and importance, reference men and women,
- Nutritional requirement of infant, pre-school and school age children, adolescent, adult, pregnant and lactating mother and aged people (Geriatric nutrition), by type of work.
- Exclusive breastfeeding
- Complementary foods

- Supplementary feeding

Unit IV: Balanced Diet 4 hrs

- Introduction
- Importance
- Food groups and food pyramid
- Uses of food group and pyramid
- Balanced diet for different age group
- Food habit and eating disorders
- Food taboos and fads
- Dietary Guidelines

Unit V: Nutritional Problems 8 hrs

- Introduction of malnutrition
- Causes of malnutrition
- Types (under-nutrition and over-nutrition)
- Micronutrient malnutrition
- Conceptual framework of malnutrition (UNICEF 1991/revised)
- Intergenerational cycle and vicious cycle of malnutrition
- Major malnutrition problems in Nepal
- Approaches to address malnutrition (National and Global)

Unit VI: Nutritional Assessment 8 hrs

- Introduction
  (Nutrition assessment of infant and young child (growth monitoring)
- Methods of nutrition status assessment:
  (Direct methods: anthropometric, biochemical, clinical; indirect methods: diet survey, use of secondary data)
- Indicators of nutritional status

References

1. Swaminathan M. Food and Nutrition, Volume I &II. India: Bappco. (new edition)
2. Bamji M.S., Rao NP, Reddy V. *Textbook of Human Nutrition*, Oxford & IBH Publishing Co. Pvt. Ltd.
3. Ministry of Agriculture Development, Department of Food Technology and Quality Control, Food Composition Table for Nepal 2012.
4. Department of food technology and quality control, Ministry of Agriculture Development, GoN. Food Composition Table for Nepal, 2012.
5. FAO. Milk and Dairy Product in Human Nutrition, 2013.
6. Gibney MJ, Lanham-New, SA & et.al. Introduction to Human Nutrition, Wiley-BlackWell, 2nd Edtion, 2009
7. Truswell AS. ABC of Nutrition. 4th Edi., BMJ
8. Park's Text Book of Preventive and Social Medicine.
9. Codex alimentarious commission
10. www.who.int
11. www.fao.org

PSD 211 Public Health Nutrition-I

BPH , Second Year, Third Semester

Course Outcomes

By the end of the course, students should be able to:

- Calculate nutritional and energy requirements of different age group people, and
- Assess the nutritional status using anthropometric measurements

Course Contents

1. Collection of various foods from students' home and develop
   - Nutrition profile of locally available and traditional foods.
   - Preparation of food pyramid in local context.
   - Dietary chart preparation
2. Assessment of food consumption practices by 24 hour dietary recall method
3. Simulation of anthropometric measurements (head, chest, arm, height, weight, skin- fold thickness, BMI, WHR, MUAC) and their interpretation and report writing

PHC 212 Communicable and Non-Communicable Disease

BPH, Second Year, Third Semester

Course Objectives:

To explore the concept of disease epidemiology and describe the infectious disease epidemiology for controlling the diseases. At the end of the course students shall be able to:

- Describe the disease epidemiology of infectious diseases prevalent in Nepal.
- Apply public health approach including prevention, promotion, protection, control and empowerment (PPPCE) for managing the NCDs.
- Describe the NCDs screening including WHO's STEP survey and its application in Public Health.

Part - I

Unit I Communicable Diseases Epidemiology 24 hours

Viral Infections

Introduction, Prevalence/Magnitude of the disease in the Nepalese context, Cause and Factors, Signs and Symptoms, Mode of Transmission, Medicine used for treatment based on National Protocol/Guidelines of Nepal/WHO, prevention and controlling measures of following:

Chickenpox, Measles, Mumps, Herpes Zoster, Influenza, Common cold, Poliomyelitis, Rotavirus, Viral Hepatitis, AIDS and other STDs of viral etiology, Japanese Encephalitis,.

Bacterial Infections

Introduction, Prevalence/Magnitude of the disease in the Nepalese context, Cause and Factors, Signs and Symptoms, Mode of Transmission, Medicine used for treatment based on National Protocol/Guidelines of Nepal/WHO, prevention and controlling measures of following:

Streptococcal infections, Meningococcal infection, Staphylococcal infections, Diphtheria, Whooping cough, Typhoid and other diarrhoeal diseases of bacterial etiology, Cholera, Plague, Anthrax, Tetanus, Tuberculosis, Leprosy, STDs of bacterial etiology, Food poisoning .

Helminth Infestations

Introduction, Prevalence/Magnitude of the disease in the Nepalese context, Cause and Factors, Signs and Symptoms, Mode of Transmission, Medicine used for treatment based on National Protocol/Guidelines of Nepal/WHO, prevention and controlling measures of following:

Filaria, infestation by Hookworms, Roundworm and other Nematodes and Taenia saginata.

Protozoal Infections

Introduction, Prevalence/Magnitude of the disease in the Nepalese context, Cause and Factors, Signs and Symptoms, Mode of Transmission, Medicine used for treatment based on National Protocol/Guidelines of Nepal/WHO, prevention and controlling measures of following:

Malaria, Leishmaniasis, Amoebiasis, Giardiasis.

Zoonotic diseases

- Introduction and need of study of zoonotic diseases in public health: Rabbis
- Area of collaboration between veterinary and medical service.

Part –II

Unit II Concept of Non-Communicable Diseases 4 hours

- Meaning, definition and types of chronic diseases and non-communicable diseases (NCD), Difference between communicable and non-communicable diseases
- Common characteristics of NCDs, Leading causes of Attributable Global Morbidity and Mortality
- Overview of Global Burden of NCDs, Risk factors of NCDs (Modifiable and Non-Modifiable risk factor s)

Unit III Major Non-Communicable Diseases 12 hours

Introduction, current situation and burden, types, risk factors, determinants, signs and symptoms, public health approach to prevention and co ntrol-

- Hypertension
- Cerebral vascular accident
- Diabetes
- Chronic respiratory diseases-COPD, Asthma, Occupational lung diseases (According to WHO)
- Cancer: Lungs cancer, cervical cancer, breast cancer, stomach cancer, oral cancer
- Accident and Violence
- Mental Health Problems

Unit IV Screening of Risk Factors **4 hours**

- STEP Survey
- Dip-stick test for kidney diseases
- Pap smear, breast self-examination
- Diabetic retinopathy test
- Screening of uterine prolapse

Unit V Approaches for Prevention and Control of NCDs in Nepal **4 hours**

- NCD and Sustainable Development Goal for Nepal
- Multi-sectoral Action Plan for the Prevention and Control of NCDs in Nepal
- WHO's Package of Essential NCDs (PEN)

References

1. Dingle JH, Badger GF, Jordan WS, Jr. *Illness in the home: a study of 25,000 illnesses in a group of Cleveland*
2. DOHS, Epidemiology and Disease Control Division. *Control of Communicable Disease Manual*
   2003.
3. Chin J. *Control of Communicable Disease Manual, an Official Report of the American Public Health Association*, 2000.
4. DOHS, Epidemiology and Disease Control Division. *National Recommended Case Definitions and Surveillance Standards* 2003.
5. Frank AL, Taber LH, Wells CR, et al. Patterns of shedding myxoviruses and paramyxoviruses in children. *J Infect Dis* 1981; 144:433– 41.
6. Monto AS, Cavallaro JJ. The Tecumseh study of respiratory illness. II. Patterns of occurrence of infection with respiratory pathogens, 1965–1969. *Am J Epidemiol* 1971; 94 :280
7. Winther B, Gwaltney JM, Jr, Mygind N, et al. Sites of rhinovirus recovery after point inoculation of the upper airway. *JAMA* 1986; 256:1763–7.
8. www.cdc.gov
9. www.who.int

PSD 212 Communicable and Non- Communicable Diseases
BPH, Second Year, Third Semester

PHS 213 Public health statistics-I

BPH, Second Year, Third Semester

Course Objectives:

To develop the student's skills on basic statistics used in public health research. After the completion of the course, the students will be able to:

- Understand the key concepts on descriptive statistics.
- Identify and use of appropriate descriptive statistical measures.

Course Contents:

Unit I: Descriptive Statistics

1. Introduction **6 hours**

- Definition of Common Statistical Terms
- Difference between Statistics and Public Health statistics - some basic concepts
- Uses of Public Health statistics in public health research

2. Measures in Descriptive Statistics 18 hours

- Methods of describing data: Frequency Distribution and Diagrammatic and Graphical Representation.
- Types of Data: Qualitative and Quantitative and their sources.
- Measures of Central Tendency and Location: Arithmetic Mean, Median, Percentiles, Quartiles, Geometric Mean, Mode
- Measures of Dispersion: Range, Quartile Deviation, Mean Deviation, Standard Deviation, Variance, Coefficient of Variance
- Common Measures of Health Status: Count, Ratio, Proportion, Percentage, Rate.

3. Probability Distribution 12 hours

- Definition of Probability: Laws of Probability, Conditional Probability and Bayes's Theorem
- Random Variables, discrete and Continuous, Probability Distribution
- The Binomial Distribution
- The Poisson Distribution
- The Normal Distribution: Empirical and Symmetry Properties of the Normal Distribution

4. Sampling Theory 12 hours

- Terms used in Sampling
- Sampling Methods (probability- simple random, stratified, systematic, cluster, multistage, and probability proportionate and non-probability- convenience, purposeful, judgmental, snowballing) and its Distribution
- Distribution of the Sample Mean, Distribution of the Difference between two sample means
- Distribution of the Sample Proportion, Distribution of the Difference between two sample proportion

(Note: In all sub units, examples are from health related field)

PSD 213 Public Health Statistics-I

BPH, Second Year, Third Semester

PHA 214 Public Health Anthropology
BPH, Second year, Third semester

Course Objectives:

To understand the fundamentals of sociology and anthropology for public health Upon completion of the course students shall be able to:

- Describe the basic concept of sociology and anthropology
- Explain the social process, social institution and social change

Unit-I: Introduction to Sociology and Anthropology 6 hours

- Origin, Meaning, Definition and Scope of Sociology
- Sub-division of Sociology
- Similarities and differences between Sociology and other Social Sciences
- Origin, Meaning, Definition and scope of Anthropology
- Sub division of Anthropology
- Similarities and differences between Anthropology and other Social Sciences

Unit-II: Basic Concept of Sociology and Anthropology 16 hours

- Society: Introduction, Definition, Fundamental Essential factors of Society, Characteristics of Society
- Community: Introduction, Definition, Basic Elements of Community, Characteristics of Community, Differences between Society and Community
- Culture: Introduction, Characteristics of Culture, Types of Culture
- Group: Meaning, Definition, Fundamental factors of Social Group, Characteristics and Types
- Institution: Meaning, Definition, Characteristics of Social Institution
- Class: Meaning, Definition,Characteristics and Basic Elements of Social Class
- Caste: Meaning, Definition, Merits and Demerits of Caste System, Causes of the Changes in Caste System, Differences between Class and Caste System
- Status and Role: Status, Role
- Meaning, Definition, Characteristics of Social Norms, Social Structure, Social Process, Social System, Social Control.

Unit-III: History of Human Society and Culture 5 hours

- History of Human Society and Culture
- Prehistoric Society and Culture
- Paleolithic, Mesolithic and Neolithic Society and Culture
- Various Modes of Production, Society and Culture: Introduction, Feudalist Mode of Production, Society and Culture, Capitalist Mode of Production, Society and Culture, Socialist Mode of Production, Society and Culture
- Hunting and Gathering, Pastural, Agririan, and Industrial Society
- State

Unit-IV: Social Processes 6 hours

- Socialization: Meaning, Definition, Characteristics, Agent/Agencies and Stage of Socialization.
- Acculturation: Introduction, Characteristics
- Assimilation: Meaning, Definition, Characteristics, Factors favoring Assimilation
- Enculturation: Meaning and Definition
- Conflict: Introduction and Characteristics
- Difference between Humans and Animal

Unit-V: Social Institution **6 hours**

- Marriage: Introduction, Definition, Characteristics, Origin, Types and Basic Function of Marriage
- Family: Introduction, Definition, Forms, Functions and Changing Situation of Family Pattern in Nepal.
- Kinship System: Introduction, Definition, Types, Kinship Terms and Degree of Kinship.
- Religious Institutions: Definition, Origin, Perspective and Social Importance of Religion.
- Political Institutions: Introduction, Condition of Political Institutions in Nepal and Political Parties.
- Economical Institutions: Introduction, Forms of Current Nepalese Economic System

Unit-VI: Cultural and Social Change 4 hours

- Introduction, Definition, Characteristics of Social Change and Cultural Change
- Factors of Socio-cultural Change
- Process or Mechanism of Socio-cultural Change
- Consequences of Social and Cultural Change

Unit-VII: Uses of Sociology and Anthropology 5 hours

- Introduction
- Utility of Sociology and Anthropology
- Sociological and Anthropological Knowledge in the Context of Socio-Cultural Development
- People Participation
- Participatory Planning
- Participatory Monitoring and Evaluation

References:

1. Francis A. *Modern Sociological Theory: An Introduction*. Oxford University Press, New Delhi, 1982.
2. Acharya BR. *Introduction to Sociology and Anthropology*. National Book Center,Kathmandu, 2060 (Nepali Text)
3. Inkeles A. *What is Sociology: An Introduction to the Discipline and profession*. Prentice Hall of India Pvt Ltd, New delhi, 1999.
4. Shankar Rao CN. *Sociology: Primary Principles*. S Chand and Company Ltd, New Delhi, 2001.
5. Magil F. *International Encyclopedia of Sociology*. 1997.
6. Makhan J. *An Introduction to Anthropological Thought.* 1995
7. Neil JS. *Sociology*, 4th Edition, Prentice Hall of India, 1993.
8. Bhusan V, Sachdeva DR. *An Introduction to Sociology*. Kitab Mahal, Allahabad, India, 1995.

PSD 214 Public Health Anthropology

BPH, Second Year, Third Semester

Learning Objectives

The purpose of this course is to acquire not only practical and applied skills for theory subjects and knowledge delivered during this semester but also to interlink these disciplines in Public Health. Theory subjects delivered during this semester includes public health. Community including organizational/institutional visit will be carried out to meet the objectives. Community visit will be conducted for Public Health anthropology. Upon the completion of the course, students will be able to:

- Apply evidence-based principles and the scientific knowledge base to critical evaluation and decision-making in public health.
- Promote high standards of personal and organizational integrity, compassion, honesty and respect for all people.
- Work collaboratively with diverse communities and constituencies (e.g. practitioners, agencies and organizations) to advance public health goals
    a. Implement and monitor the program
    b. Evaluate the program
- Demonstrate effective written and oral skills for communicating with different audiences in the context of professional public health activities.
    a. Present in the community

Course Contents

1. Collection of various foods from students' home and develop
2. Nutrition profile of locally available and traditional foods.
3. Preparation of food pyramid in local context.
4. Dietary chart preparation
5. Assessment of food consumption practices by 24-hour dietary recall method
6. Assessment of anthropometric measurements (head, chest, arm, height, weight, skin- fold thickness, BMI, WHR, MUAC) and their interpretation and report writing

PHE 215 Environmental Health-II
BPH, Second year, Third semester

Course Objectives:

To clarify the concept and application of environmental health that can support in understanding the relationship between environment and human health. At the completion of the course students shall be able to:

- Understand the concept of environmental health.
- Explore the environmental health problems of Nepal
- Clarify the role of water resource and solid waste in promoting public health

Course Contents:

Unit-I: Introduction to Environmental Health **5 hours**

- Concept and application of environmental health
- Scope of environmental health
- Components of environmental health

Unit-II: Environment, Biology and Ecology **8 Hours**

- Concept of environment, biology and ecology.
- Human-environment interaction and human impact on ecosystems.
- Ecosystem approach
- Ecosystem approach to human health and diseases
- Agro ecosystem
- Links between agro ecosystem and human health
- Concept of human well-being

Unit-III: Common Environmental Health Problems of Nepal 20 hours

- **Environmental Problems in Rural Areas**
  - Poor sanitation and hygiene
  - Indoor air pollution
  - Unsafe drinking water
  - Flooding and drought
  - River siltation
  - Loss of Biodiversity
  - Deforestation
  - Soil erosion
  - Desertification
- **Environmental Problems in Urban Areas**
  - Air pollution
  - Industrial pollution
  - Water pollution

Unit-IV: Biodiversity and Its Conservation 8 Hours

- Basic concepts and importance of biodiversity
- Biodiversity and biotechnology.

- Challenges to the preservation of biodiversity.
- Biodiversity and human health
- Conservation and its impact on human health

Unit-V: Water Resources Management 14 hours

- Types, sources and effects of water pollution
- Rivers and ground water pollution
- Sources of water supply and availability in Nepal (rural and urban)
- Human health and water quality
- Water and water related diseases.
- Water purification, WHO standard and prevention and control measures.
- Liquid waste management

Unit-VI: Solid Waste 9 hours

- Solid waste production and disposal
- Resource recovery from solid waste (including human excreta)
- Types, sources and effects of hazardous wastes
- Control and management of hazardous wastes

Unit-VII: Air Pollution 8 Hours

- Types and sources of air pollution
- Effects of air pollution on biological system
- Effects of air-pollution on human health
- Effects of air-pollution on Ozone layer and global climate
- Management of air pollution

References

8. Beacon Press, MOPE, State of the Environment of Nepal, Kathmandu: Ministry of Pollution and Environmental Nepal 2000.
9. FAO/WHO. Health and Environment in Sustainable Development *WHO/EHG/97.8* 1997
10. Miller, Tyler, Environmental Science. USA: Wadsworth Inc1988.
11. MOPE/ICIMOD/UNEP (2001*), Nepal: State of the Environment Report* 2001. Kathmandu: UNEP/ICIMOD
12. Ojha. S. *Watawarniya swasthya re sarsaphai*, Kathmandu: Health Learning, Material Centre, BS 2046.
13. Sloan, WM *Site selection for new hazardous waste management facilities*. WHO1993.
14. WHO. *WHO commission on health and environment*. Report of the panel on food and agriculture. Geneva: WHO1992

PSD 215 Environmental Health –II

BPH, Second Year, Third Semester

1. Assessment of water quality
2. Drinking water quality tests (primary or secondary data from drinking water office)
3. Residual Chlorine test
4. Turbidity test
5. Coliform test
6. Waste Water tests and its reuse
    a. BOD
    b. Chemicals
    c. Development of low cost water re-use methods
7. Secondary data (air pollution) from Ministry of Environment

BPH

Second Year

Fourth Semester

PHN 221Public Health Nutrition –II
BPH, Second year, Fourth semester

Course Objective:

To develop knowledge on food hygiene, existing nutritional program in Nepal and social cultural aspect of food and nutrition. At the end of the course students shall be able to:

- Explain the concept of the food hygiene, food processing, and food adulteration to the public health promotion
- Assess, monitor and evaluate the nutritional program in Nepal.
- Explore and address the socio-cultural factor of food and nutrition in relation to public health promote.

Course Contents:

Unit-I: Food Hygiene, Food Processing and Food Adulteration **12 Hours**

- Food hygiene, at family and industrial level, effect on health
- Food and the effects of unhygienic food and health
- Food hygiene and nutrition during preparation, processing, storage and consumption
- Food adulteration, it causes and health effects
- Health and Food Acts and its implementation

Unit-II: Nutrition and Diseases 15 Hours

- Diet and Coronary Heart Disease, CVD
- Diet and Diabetes Mellitus
- Role of Foods in Cancer prevention
- Diet and bone health
- Food interaction and public health promotion

Unit III: Nutrition Program in Nepal 12 Hours

- National nutrition policy of MOHP
- National nutrition strategies-IYCF, School Health & Nutrition
- National Nutrition Programs
- Nutrition Intervention Program-food fortification and supplementation in Nepal and SAARC countries
- Lesson learned and constraints of national nutrition programs
- Inter-sectoral cooperation and coordination for nutrition promotion in Nepal

Unit-IV: Poverty, Food Security and Nutrition 10 Hours

- Poverty and Nutrition
- Food Security and Nutrition
- Investing in health interventions for nutrition promotion: Cost effectiveness and quality of life
- Effects of Malnutrition on Economic Productivity, Health, and Survival

Unit-V: Food Quality Control

- Critical assessment of food quality control (Hazard Analysis)
- Good food manufacture practices (Provision of food sanitation)
- Food act and implementation\

References

1. Gopalan BV, Sastri R and S.C. Balasubramaniam. *Nutritive Value of Indian Foods*. Hyderabad, India. NIN and Indian Medical Research: 1994
2. Felicity SK and Aurgess A. *Nutrition for Developing Countries*, Second edition, Oxford University Press: 1992
3. Government of Nepal, Department of Health Services. Annual Report, 2074/2075
4. MoH/MI/New ERA. *Nepal Micronutrient Status Survey*, Kathmandu: 1998.
5. Asian Development Bank, UNICEF. Investing in Child Nutrition in Asia: Nutrition

and Development Series No. 1 edited by Joseph Hunt and M.G. Quibria
6. MoH/New ERA/ORC Macro. *Nepal Demographic Health Survey* 2016, Kathmandu
7. Swaminathan M. *Advanced textbooks on foods and nutrition*, Volume II & I. India: Bappco 1990.

PSD 221 Public Health Nutrition –II

BPH, Second Year, Fourth Semester

Course Description

This course, under Public Health Application strand, helps to acquire basic and practical skills of various theoretical disciplines of third semester as mentioned in course objectives. The course objectives will be met with group and individual assignments, collection and analysis of primary and secondary data in close collaboration with faculties and the program coordinator.

Learning Objectives

The purpose of this course is to acquire not only practical and applied skills for theory subjects and knowledge delivered during this semester but also to interlink these disciplines in Public Health nutrition Practice in an integrated way. Upon the completion of the course, students will be able to:

Apply evidence-based principles and the scientific knowledge base to critical evaluation and decision-making in public health.

- Assess nutritional status of children and other high-risk population segments of nearby community using anthropometric measurements and carry out health promotion activities
- Develop a food pyramid and recommend a balanced/healthy diet based on it to the local community.

1. Collection of various foods from students' home and develop
    a. Nutrition profile of locally available and traditional foods.
    b. Preparation of food pyramid in local context.
    c. Dietary chart preparation
2. Assessment of food consumption practices by 24-hour dietary recall method
3. Assessment of anthropometric measurements (head, chest, arm, height, weight, skin- fold thickness, BMI, WHR, MUAC) and their interpretation and report writing
4. Calculation of disease burden by count and frequency using secondary data obtained from nearby health facilities- major morbidity and mortality indicators of various major communicable and non-communicable diseases
5. Calculation of high risk behavior indicators from primary data, using count and frequency
    a. Current smoker/tobacco user
    b. Second-hand smoking
    c. Current alcohol user
    d. Binge drinking
    e. Low fruits and vegetables consumption
    f. Inadequate physical activity

g. Regular/in last 30 days breast-self examination

PHE 222 Applied Epidemiology

BPH, Second Year, Fourth Semester

Course Description

This study will help the student to achieve the knowledge of epidemiological study design, calculation and applied epidemiology.

Learning Objectives

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

- Develop the knowledge on epidemiological study design
- Calculate and apply frequency measures used in epidemiology
- Understand the applied forms of epidemiology

Course Contents

Unit I: Epidemiological study Design **36 Hours**

1. Frequency Measures Used in Epidemiology

i. Definition concept and comparison of proportion, rate and ratio

ii. **Frequency measures used in Morbidity**: Incidence and prevalence rate; attack rate and secondary attack rate; person time rate; rate ratio, risk ratio (relative risk) and odds ratio; attributable risk and population attributable risk

iii. **Frequency measures used in Mortality**: Crude death rate; Cause specific mortality rate; age, sex and race specific mortality rate; infant mortality rate; case fatality rate; death to case ratio; Maternal mortality ratio; postnatal mortality rate; proportionate mortality ratio

iv. **Frequency measures used in Natality:** Crude birth rate; crude fertility rate; crude rate of natural increase

2. Study Design

a. Types of study: Descriptive, Analytical and Experimental

b. Ecological study and ecological fallacy

c. **Case Control study**

i. Theoretical foundation
ii. Nested case control studies
iii. Selection of cases and control
iv. Calculation and interpretation of odds ratio in case control study
v. Comparability of odds ratio and relative risk
vi. Matching and overmatching
vii. Advantages and disadvantages of case control study

d. **Cohort Study**

i. Theoretical foundation
ii. Closed cohort and dynamic population study
iii. Prospective and retrospective cohort study
iv. Time related aspects of exposure and follow up period
v. Selection of comparison group in cohort study
vi. Calculation and interpretation of risk ratio in cohort study
vii. Advantages and disadvantages of cohort study

e. **Interventional Study**

i. Types of interventional study

ii. Trials: clinical trials, field trials, community intervention and cluster randomized trials
iii. Masking in interventional study
iv. Advantages and disadvantages of interventional study

f. Validity and reliability and their types
g. Threats to validity in epidemiological study
   i. Chance
   ii. Bias and its types
   iii. Concept of confounding and the methods of prevention and controlling it: randomization, restriction and stratification
   iv. Generalizability

3. Causation and Causal Inference

a. Spurious and causal association
b. A general model of causation: Concept of necessary and sufficient cause, Rothman's causal pie- conceptual schemes for a causes of a hypothetical disease strength of effect, Interaction among causes, Induction period, generality of the model, Measurements of strength of association

Unit II: Special Issues in Epidemiology **8 Hours**

1. Surveillance

i. Objectives of surveillance
ii. Elements of a surveillance system
iii. Approaches to surveillance
iv. Attributes of surveillance
v. Public Health surveillance
vi. Sentinel Surveillance and management methods of sentinel sites
vii. Surveillance systems adopted by Ministry of Health and Population

2. Screening

i. Natural history and characteristics of diseases
ii. Effects of screening
iii. Characteristics of screening: Measure of test performance
iv. Lead time and detectable pre-clinical phase: predictive value
v. Advantages and disadvantages of screening

Unit III: Applied Epidemiology **4 Hours**

- Social Epidemiology
- Public Health Epidemiology
- Environmental Epidemiology
- Nutritional Epidemiology
- Reproductive Epidemiology
- Field Epidemiology
- Travel Epidemiology

References:

1. Beaglehole R, bonita R, Kjellstrom T. *Basic Epidemiology*. World Health Organization, Geneva, 1993.
2. Gordis L *Epidemiology*. 2nd Edition, WB Saunders Company, Aharcourt Health Sciences Company, Philadelphia, 2000.
3. Heninkens CH, Buring JE. *Epidemiology in Medicine*. Lippincott Williams and Wilkins, a Wolters Kluwer Company: 1987.

4. MacMahon B, Trichopoulos D. *Epidemiology: Principles and Methods*. 2nd Edition. Boston: Little, Brown, 1996.
5. *Principles of Epidemiology: An Introduction to applied Epidemiology and Biostatistics*. 2nd Edition. US Department of Health and Human Service, CDC, Atlanta Georgia
6. Rothman KJ, Greenland S. *Modern Epidemiology*. 2nd Edition, Lippincott- Raven publishers: 1998.
7. Rothman KJ. *Epidemiology: an Introduction*. Oxford University Press, 2002

PSD 222 Applied Epidemiology

BPH, Second Year, Fourth Semester

PHS 223 Public Health Statistics - II
BPH, Second year, Third semester

Course Objectives:

To develop the student's skills on statistical measures in public health research and to develop the student's skills on the use of statistical software during data analysis process. After the completion of the course, the students will be able to:

- Identify and use appropriate statistical measures for analytical and experimental study designs.
- Perform statistical analysis using appropriate statistical software in computer.
- Interpret the statistical outputs.

Course Contents:

Unit I: Inferential Statistics-Estimation **12 hours**

- Relationship of Population to Sample and Random Number Tables
- Standard Error of the Mean, The Central Limit Theorem
- Sample Size Estimation
- Point and Interval Estimation for the Mean
- Estimation of Confidence Interval

Unit II: Inferential Statistics- Hypothesis testing and assumptions 28 hours

- Hypothesis Testing: Type I and II Errors, The Power of a Test, Basic concept on P value and its estimation
- Normality test (Kolmogorov Smirnov Test)
- Parametric Test: Test for Mean – t-Test, Z-test, ANOVA
- Non-parametric Test: Chi-square Test, Fisher Exact Test, McNemar Test, Yate's Correction, Test for Mean – Mann Whitney U Test, Wilcoxon Matched Pair Sign Rank Test, Friedmann Test, Krusal Wallis Test

Unit III: Correlation and Regression Analysis **8 hours**

- Correlation: Test of Relationships – Linear/Pearson's Correlation (parametric test), Spearman Rank Correlation (non-parametric test)
- Regression: The Linear Regression Model, Least Square Method, Multiple Regression

References:

2. Gurung CK. *A handbook of Bio-statistics*; 1st Edition, Makalu Books, Kathmandu, 2005.
3. Rosner B. *Study Guide: Fundamentals of Bio-statistics*, 5th Edition, Duxbuey Thomson Learning, 2000.
4. Daniel WW. *Bio-statistics: A Foundation for Analysis in the Health Sciences*, 7th Edition, John Wiley & Sons, Inc. 1999.
5. Anthony D. *Understanding Advanced Statistics*, Churchill Livingstone, Harcourt Brace and Company Limited, 1999.
6. Essex-Sorlie D. *Medical Bio-statistics & Epidemiology*, 1st Edition, Appleton & Lange, Morwalk, Connecticut, USA, 1995.
7. Mahajan BK. *Methods in Bio-statistics*. Jaypee Brothers, Medical Publishers (p) Ltd., G-16, EMCA House, 23/23B, Ansari Road, Daryaganj, Post Box: 7193, New Delhi 110 002, India, 1991.

PSD 223 Public Health Statistics–II

BPH, Second Year, Fourth Semester

PHS 224 Public Health Sociology
BPH, Second year, Fourth semester

Course Objectives:

To analyze the behavioral, social, and cultural factors associated with health and illness.To develop an understanding of theories associated with health and illness that draw broadly from the social and behavioral sciences, including psychology, sociology and anthropology.
At the end of the course students shall be able to:

- Develop an understanding of public health initiatives that are based on social science theories
- Apply the concept of sociology/anthropology in health care practices.
- Demonstrate an understanding of social and behavioral public health initiatives through class discussions, term paper, and oral presentation
- Develop in-depth knowledge of a specific public health initiative that is based on social science theory
- Develop an understanding of research issues in social and behavioral public health
- Analyze the factors influencing motivation in adopting of innovations on acceptance of modern health care facilities.

Course Contents:

Unit-I: Medical Sociology and Anthropology 38 hours

1. Introduction

- Common terminologies: Ethnicity, Mores, Folk Ways, Social System, Social Control, Social Disorganization, Social Problems, Acculturation, Enculturation, Socialization, Cooperation, Accommodation, Assimilation, Conflict, Modernization, Westernization, Sanskrtisation, Ethnomedicine, Ethnopsychiatry, Value, Beliefs, Perception, Knowledge, Attitude, Behavior, Custom, Habit, Self Medication, Institution, Organization.
- Branches of Sociology and Anthropology
- History, Present Status, Emergence and Future of Medical Sociology and anthropology

2. Health Behavior, Illness Behavior and Sickness Role

- **Health Behavior**
  - Definitions of Health.
  - Definitions of Health Behavior and Health Status.
  - Models of Health Behavior.
  - The Health Belief Model.
  - An Emerging Model of Health Behavior.
  - The Influence of Health Promotion and Lifestyle on Health Behavior.
  - Social-Structural Influences on Health and Health Behavior.

Illness Behavior

- Interpretations of Illness Behavior.
- Self Care, Socio Demographic Variables, Socio Economic Status, Predisposing, Enabling and Need Components.
- Socio Psychological Models of Illness Behavior:
  - David Mechanic theory: TEN determinants
  - Suchman's Stages of Illness Behavior.
    - The symptom experience stage.
    - Assumption of sick role stage.
    - The medical care contact stage.
    - The dependent / patient role stage.
    - The recovery of rehabilitation stage

Sickness Role

- The Importance of the Sick Role.
- The Sick Role: An Introduction to Illness as Deviance and sickness as social deviance and being sick.
- The Influence of Sex, Age, Race and Ethnicity, and social Class on the Sick Role.
- Meaning and significance of the interpersonal relationship.
- The Physician- Patient Role relationship: Models of Interaction and cultural difference in communication
    - Person's sick role model.
    - Swaz and Hollander's model.
    - Communication pattern between modern provider - consumer and indigenous provider- consumer relationship.
    - Barriers on effective provider consumer relationship.

3. The History of Medicine

- The History of Medicine in Western Civilization.
- The Dawn of Civilization to Egyptian Medicine.
- The Influence of Greek and Roman Medicine.
- Medicine and the Medieval Period.
- Medicine in an Industrial Society.
- Traditional and Alternative Medicines/Practitioners.
    - Alternative Medicines and Their Practitioners.
    - Homeopathic Medicine.
    - Acupuncture.
    - Ayurveda.
    - Barefoot Doctors.
    - Modern Practitioners of Traditional Medicine.

4. Socialization and Social Learning in Health

- Definition, meaning, and significance of socialization and health socialization.
- Agencies ,Characteristics and stage of socialization
- Theories of socialization (Sigmund Freud, Cooley, G S Mead)
- Social learning and its importance in health.
- Essentials of socialization in health.

5. Culture and Health

- Meaning and definition of culture.
- Characteristics, Elements and Types of culture.
- Cross-culture examples of culture in relation to behavior and health problem in health care system.
- Role of indigenous healers in primary health care.
- Self-medication and other prevailing health care practice in Nepal.

6. Socio-cultural Change, Social Problem and Control

- Definition and Nature of social and cultural change.
- Factors, Causes and Barriers of change
- Process of Socio cultural change
- Consequences of socio cultural change
- Meaning, Nature and Cause of social problem.
- Social problems: Prostitution, Sexual abuse, Alcoholism, Drug abuse, Crime, Suicide, Child labor and their impact in society and health.
- Meaning, Purpose and Agencies of social control.
- Practice of social control in health in Nepal.

7. Research Methods in Sociology/Anthropology

- Meaning, steps and concept of basic, applied and sociological anthropological research.
- Distinction between qualitative and quantitative research.
- Methods of sociological and anthropological research.

8. Policy and Politics of Health

- Health Care Policy and politics in terms of historical and contemporary issues related to access, quality, and cost. Organizational, financing.

9. Legislative aspects of health

- Role of health advocacy and lobbying in health policy formation.
- Legislative procedure related to health.

10. Executive aspects of health

- Executive structure for health service administration and management.
- Executive decision and their effect on health policy formation.
  - Executive decision making and their effect on health program implementation.

11. Judicial Aspects of Health

- Health Law: nature, implementation strategies and challenges.
- Control of health hazards through health laws and regulation.
- Legal protection against the threats to physical, mental and social health of public.
- Health law and preventive public health.
- Epidemics and health laws.

PSD 224 Public Health Sociology

BPH, Second Year, Fourth Semester

PHO 225 Occupational Issues and Management
BPH second Year, Fourth Semester

Course description

The course offers an opportunity to understand and internalize emerging Occupational issues and problems globally and locally. The course is also expected to help the students to link between the major occupational concerns to the implication of public health in general. The course will also apply the theoretical and conceptual knowledge and available occupational in understanding human activities in deteriorating and exploiting the environment and find a sustainable way for its mitigation.

Course objectives

Objective of the course is to assist the students to understand, describe, explain and analyse the following

1. Occupational Health and Safety 2. Industrial hazards 3. Agriculture issues and management 4. Professional health hazards and management

Unit 1 Occupational Health and Safety 5 hrs

Historical development

Definition

Concept

Principles

Elements

Occupational health laws of Nepal

Unit 2 Industrial Hazards 13 hrs

Occupational Dermatitis Occupational respiratory diseases Silicosis

Pneumoconiosis

Asbestosis

Byssinosis

Bagassosis

Farmer's lung

Bird Fanciers lung

Unit 3 Agriculture issues and management 10 hrs

Sectors

Health hazards

Managements

Occupational health risk factors and their management

Health problems of aging population

Health problems of child care workers

Women workers and their risk factors and their management

Professional risk factors and their management

Worker's compensation

Ergonomics

Labour Act, occupation health policy in terms of social, political and economic aspects

Unit 4 Professional health hazards and Management 10 hrs

Road Traffic Accident (RTA)

Chronic Obstructive Pulmonary Disease(COPD)/Bronchial Asthma

Smokers' lung

Health profession

Uint 5: OHS Hazard: Assessment and Management 10 hours

Workplace Assessment and Occupational Hygiene: Tools, Techniques and Measurement;

Hazard Identification and Risk Assessment: Principle and Application of qualitative and quantitative analysis and Management;

Accident investigation and Root Cause analysis: Concept and Principle,

Job Safety Analysis: Principle and Application

Workplace Hazard control: Principle and Techniques.

Teaching learning methods

Teaching learning methods of this course includes didactic lectures, group work, and discussion in the class room setting. Laboratory demonstration classes will be held along with hands on exercise. Educational tour will be organized to visit different organizations related to environmental issues

References

1. Fundamental principles of occupational health and safety, Benjamin O. ALLI, ILO Geneva.

2. Fundamentals of Occupational Safety and Health Fourth Edition Mark A. Friend and James P. Kohn, Government Institutes An imprint of The Scarecrow Press, Inc. Lanham, Maryland, Toronto, Plymouth, UK 2007. Downloaded from (http://ohshub.com/wp).

3. Gautam R P et. al Current situation of occupational health and safety in Nepal.

4. Corson, W.H. 1990. The Global ecology handbook, beacon press, Boston. USA.

5. DOHS. 2017. Annual report of department of health services, Nepal

PSD 225 Occupational Issues and management

BPH, Second Year, Fourth Semester

BPH
Third Year
Fifth Semester

PHP 311 Population Studies
BPH, Third year, Fifth semester

Course Objectives:

The course imparts the basic knowledge and understanding on population studies, which will provide a better perspective in, managing public health care system and methods for calculating different demographic indicators and their interpretation.

1. Understand the structure, characteristics, and components of population and population growth.
2. Understand the consequences and the implication of population growth on health and resource base.
3. Conceptualize the interrelationship between population growth and sustainable development.

Course Contents

Unit 1. Introduction to Population Studies 6 hrs

- Importance and implication of population study in public health,
- Concept and definition of some useful terms such as ratio, rates, proportion, cohort etc
- Sources of population data and importance of Population Census, Vital registration system
- Sample surveys, health institution data, national international publications

Unit 2. Population Structure, Characteristics and Components 6 hrs

- Importance of sex and age structure, marital status, literacy rate, sex ratio, religion, ethnicity, dependency ratio
- Different, methods of calculating growth of population. Growth of population in Nepal and the growth pattern in the world as well
- Concept of young, old age population and aging of population

Unit 3. Population growth and its trend in Nepal with comparison 4 hrs

- Present population growth in the Nepal and its growth trends
- Present population growth in SAARC countries the world and growth trend of world

Unit 4. Three Components of population growth 12 hrs

1. Fertility
   a. Measure of fertility and its importance
      Concept of fertility and its different measures such as Crude Birth Rate, and specific rates, total fertility rate
   b. Other measures if Fertility and some concepts Child women ratio and its use Standardized birth rates and its purpose
      Replacement level of fertility
      Population momentum Factors affecting fertility
      Baby Boom and Baby bust syndrome
   c. Measures of reproduction
      Concepts and importance of gross and net reproduction rate

2. Mortality
   a. Measure of mortality of Concepts and importance
      Crude and specific rates, infant and Maternal mortality ratio
      Other measures of mortality
      Neonatal and post neonatal mortality, foetal, prenatal mortality rates Standardized death rate and its importance
   b. Factors affecting mortality

3. Migration

Some measures of migration

Concepts, some useful terms, types of migration

Estimation of life time and intercensal migration from place of birth statistics Factors affecting migration

Unit 5. Morbidity 6 hrs

Determination of rates and ratios

Concept of incidence rate, period prevalence and point prevalence rate

Unit 6. Population Projections 6 hrs

Importance of population projection, difference between projection and estimation Population Projection by balancing equation

Mathematical methods of population projection and their appropriate use and constraint

Arithmetical method Geometric model Exponential model

Unit 7. Population policy and program in Nepal 4 hrs

Essential requisite of population policy

Recent Goal, target, strategies and population program of Nepal Analyze the population policy of Nepal and comment

Unit 8. Population Theories 6 hrs

a. Early thinking on Population issues

b. Malthusian doctrine and Neo-Malthusians, Cornucopias concepts Demographic transition theory

Unit 9. Measures of Urbanization 6 hrs

Some useful terms

Different definition urban area in Nepal

a. Different measures of urbanization in degree Percentages of population in urban areas Ratio of urban and rural population Size of locality of residence of the median inhabitant Mean City Population Size

b. Tempo (speed) of urbanization

Different method of Tempo of urbanization

Annual change of percentage points for all degree measures

Annual average rate of change of percentage urban

c. Factors affecting Urbanization

References

1. Ajit Pradhan et al, " Nepal Maternal Mortality and Morbidity Study 2008/2009,Family Health Division, Government of Nepal ,Kathmandu, Nepal
2. Bhende, AA and Kanitkar T. "Principles of population studies" Himalaya Publishing House, Bombay, (Latest edition)
3. Bogue. D. "Principles of Demography", John Wiley and Son New Works, 1969.
4. Comprehensive family planning (COFP) course NHIC/Nepal.
5. Cox. RC. "Demography", Cambridge University Press. 1986.
6. Misra Bhaskar "An introduction to the study of population" South Asian Publishers Pvt. New Delhi. (Latest Edition)

PSD 311 Population Studies

BPH, Third Year, Fifth Semester

PHR 312 Reproductive Health and Elderly Health
BPH, Third Year, Fifth Semester

Course Objectives

This course provides introductory knowledge of the reproductive and elderly health. In particular, this course focuses on the concept, scopes, problems and issues of reproductive and elderly health. Upon the completion of the course, students will be able to:

- Define reproductive health and elderly health.
- Describe the concept, scopes and basic content of reproductive health and elderly health.
- Describe problems, challenges and issues of reproductive health and elderly health.

Course Contents

Unit I: Reproductive Health **9 hours**

1. Concept and definition
2. Development of human sexuality and Sexual orientation: Gay (MSM-Male sex with male), Lesbian (FSF-female sex with female) and bisexual including transsexual and intersex (LGBTI)
3. Scopes and components of reproductive health
4. Forms of sexual behaviour and their effects on health: normal and abnormal-
   - Solitary sexual behaviours
   - Heterosexuality
   - Premarital and extramarital sexual behaviour and their issues
   - The varieties of abnormal sexual behaviours
   - Paraphilia
   - Hyper sexuality
5. High risk sexual behaviour
6. Responsible and safer sex behaviours
7. Reproductive process: Menstruation, fertilisation, pregnancy, birth
8. Overview of priority aspects (WHO) of reproductive health and public health concern:
   - Improving antenatal, delivery, postpartum, and newborn care;
   - Quality family planning services;
   - Eliminating unsafe abortion;
   - Combating STI/HIV/AIDS and gynaecological problems; and
   - Promoting sexual health

Unit II: Family Planning **9 hours**

1. History, concept, definition and scope
2. Family Planning as Basic Human Rights
3. Role of FP in MDGs
4. Benefits of Family Planning
5. Health aspects of family planning

- Women's health
- Foetal health
- Neonatal, infant and child health

6. Contraceptive methods
   - Spacing methods
     - Barrier methods
     - Intra-uterine devices
     - Hormonal methods
     - Post-conceptual methods
     - Miscellaneous

   - Terminal Methods
     - Male sterilization
     - Female sterilization

7. Fertility care services- Rcanalization, Invitro-Fertilization (IVF), Assisted Insemination Donor/husband (AID), surrogacy
8. Contraceptive prevalence rate (CPR) and couple year of protection(CYP)
9. Elements of family planning program
10. Evaluation of contraceptive methods (Pearl Index, Life-table analysis)
11. Unmet need for family planning
12. Adolescence and contraception
13. Emergency contraceptives
14. Quality assurance in family planning service delivery
15. Counseling for Family Planning

Unit III: Abortion **4 hours**

1. Overview of concept, definition and various forms of abortion and their causes
2. Health effects of unsafe abortion and its prevention
3. Overview of safe abortion law, policy and strategies in Nepal
4. Challenges of liberal abortion strategies to public health functions
5. Sex selective abortion and its impact on demography

Unit IV: Adolescent Reproductive Health in Nepal **2 hours**

- Introduction
- Importance of focussing on adolescent reproductive health
- Status of ASRH in Nepal
- National adolescent health and development strategy
- Adolescent friendly services
-

Unit V: Gender Based Violence **2 hours**

- Introduction
- Factors contributing to GBV
- RH and GBV
- Importance of gender equality
- Ways to improve gender equality

Unit VI: Infertility **2 hours**

- Introduction
- Causes of infertility
- Social consequences of infertility

Unit VII: Reproductive Health Issues and Conventions **4 hours**

- Common reproductive health issues: Harmful practices, unwanted pregnancy, unsafe abortion, reproductive tract infections including sexually transmitted diseases and HIV/AIDS, gender-based violence, infertility, malnutrition and anemia, and reproductive tract cancers.
- International Conference on Population and Development (ICPD)
    - Goals of ICPD
    - Guiding principles of ICPD

Unit VII: Elderly Health **16 hours**

1. Concept, meaning, scopes and components of elderly health
2. Situation of ageing population in global and national context
3. Strategies of elderly health in global and national context
4. Health problems of elder people
5. Lifestyle and healthy aging
6. Geriatric health services
7. Policy, strategy and programs for elder population
8. Public health concerns of elderly health

Reading Materials

1. Reproductive Health Epidemiology Modules | Publications and Products | Reproductive Health | CDC. [cited 2017 Jul 31]. Available from: https://www.cdc.gov/reproductivehealth/productspubs/modules.htm
2. Textbook of Public Health and Community Medicine, 2009 Published in Collaboration with WHO. Editor: Rajvir Bhalwar. [cited 2017 Jul 31]. Available from: https://www.researchgate.net/publication/282132865
3. Divya A. Patel, MPH, Nancy M. Burnett, BS, Kathryn M. Curtis, PhD. Maternal Health Epidemiology. [cited 2017 Jul 31]. Available from: https://www.cdc.gov/reproductivehealth/productspubs/pdfs/epi_module_2_04 tag508.p df
4. Park K. Park's textbook of preventive and social medicine. India, Jayapyr 1167, Publisher M/S BanaesidasBhanot. 2015.
5.

PSD 312 Reproductive and Elderly Health

BPH, Third Year, Fifth Semester

The purpose of this course is to acquire not only practical and applied skills for theory subjects and knowledge delivered during this semester but also to interlink these disciplines in Public Health Practice. Upon the completion of the course, students will be able to:

- Apply evidence-based principles and the scientific knowledge base to critical evaluation and decision-making in public health.
    a. Develop reproductive and elderly health profile of a nearby community
    b. Carry out various analysis related to risk behavior and disease burden; nutritional status of elderly population based on selected indicators
    c. Develop plan of action along with prototype of health promotion program focusing disease prevention of reproductive and elderly population.
    d. Prioritize the program

PHE 313 Health Promotions and Education

BPH, Third Year, Fifth Semester

Course Description

This course will help to develop concepts of health promotion and education and their application in public intervention.

Learning Objectives:

To appraise the students on the basic concepts of health promotions and education and their application in public health intervention. At the completion of the course students will be able to:

- Understand the history, meaning, scope, principles and theories of health promotion and education
- Understand and apply different public health approaches, health promotion and education
- Acquire knowledge and skills on health promotion and education methods and media.

Unit I: Health Promotion and Education 18 Hours

- History of health promotion and education
- Meaning, concept, principles, scope and philosophy of Health Education and Health Promotion
- Roles and responsibilities of public health specialist in health promotion and education
- Analytical study of various definitions of health promotion and education
- Theories and modalities for behavior change
    i. Theory of reasoned action (Sibhbein)
    ii. Health Belief Model (Rosenstock etc)
    iii. Cognitive Dissonance Theory (Festinger)
    iv. Force field analysis (Kurt Lewin)
    v. Motivation theories (Maslow, Hertzberg)
    vi. Behaviour change communication (BCC)
    vii. Ottawa Health Charter and Jakarta declaration of health promotion.
    viii. Role of international union for health promotion and education (IUHP)

Unit II: Health Promotion and Education 12 Hours

- Role of education in public health, primary health care and social development
- Group dynamics: group development and team building
- Community organization and community development
- Social and planned change:
    i. Change process: meaning importance and kinds
    ii. Change modules: adoption process; unfreezing, moving and re-freezing
    iii. Change strategies: homophile, empathy, reciprocal

Unit III: Health Promotion and Education: Methods and Media 18 Hours

- Detail study of theoretical aspect of communication: meaning, process, elements, barriers and strategies.
- Comparative study and analysis of different methods (individual. group and mass):
    i. interview, counseling
    ii. Group discussion, demonstration, role play, panel discussion, fish-bowl session, buzz session, mini-lecture, field trip, workshop and seminars

iii. Lecture and exhibition

- Comparative study and analysis of various media of health Education: radio, film, television, tape recorder, film stop, poster, pamphlet, bulletin board, flash card- flip chart, flannel, graph and puppet.

Reference

1. Bedworh D., Bedworth A. *Health Education: A Process of Human Effectiveness*. Harper and Raw NY, 1978.
2. Guilbert.JJ. *Educational Hand Book for Health Professional*. Geneva: WHO,1977.
3. Skinner BF. *About Behaviouralism*, New York, Alped A Knoff. 1974.
4. Freire P. *Pedagogy of Oppressed*. New York, the Seaburt Press. 1974.
5. Murray G. Ross. *Community Organization*. Harper and Row Publishers , 1964.
6. Berio DK. *The Process of Communication*. Holt. Rinehert and Winston inc. 1960.
7. Armin MF Goidschmidt BH. *Communication Between Doctor and Patients in Thailand*. Saarbncken 1972.
8. Luft J. *Group Processes - An Introduction to Group Dynamics*. Joseph 2nd edition, 1970

PSD 313 Health Promotion and Education

BPH, Third Year, Fifth Semester

Course Description

The course objectives will be met with group and individual assignments, collection and analysis of primary and secondary data and intervention on family health approaches in close collaboration and mentorship of faculties, field/course coordinator; and the program coordinator. The guideline will cover about 50 progressive working days as followings:

Learning Objectives

The purpose of this course is to acquire not only practical and applied skills for theory subjects and knowledge delivered during this semester. Promote the health of the community people with health promotion and education approaches at household and community level. Upon the completion of the course, students will be able to:

- Develop quantitative and qualitative assessment tools as deemed necessary for the selected and prioritized public health;
- Collect and analyze data;
- Prioritize the action program within the theme;
- Develop plan of action along with prototype of health promotion program applying any theory/model of health promotion;
- Implement, monitor and evaluate the health promotion program;
- Organize and conduct community assembly in a more advanced way;
- Maintain and record daily diaries;
- Present the findings in community and school/college; and
- Prepare and submit the report in a prescribed format.

Course Contents

- Orientation/Workshop
    a. Prioritization of the public health theme with development and use of prioritization grid on the basis of public health problem
    b. Review of health promotion theories and models applicable at different settings
    c. Prototype development on the basis of behavioral sciences, epidemiology, and theory/model of health promotion
    d. Practical Skill development in Epi-data (for making views/questionnaires) and SPSS (for analysis)
    e. Skill development in AnthroPlus
    f. Skill development in qualitative data collection, entry, and analysis
    g. Planning, implementing and evaluating the community health promotion program
    h. Pretesting the tool
    i. Plan of action for field and school/college activities
- Community and health facility visit and collection of data (both quantitative and qualitative)

- Checking data for errors and correction
- Quantitative data entry in Epi-data and analysis in SPSS Ver. 16
- Qualitative data analysis manually (on the basis of thematic analysis)
- Enter and analyze nutrition related data in Anthro Plus
- Prioritization of actionable program for intervention
- Development of prototype of health promotion model/theory for intervention based on behavioral sciences and epidemiology within this and previous semesters
- Plan of action for intervention, monitoring and evaluation
- Program implementation based on prototype for community health promotion
- Daily diary and recording format
- Evaluation of program
- Presentation in the community
- Presentation at school/college
- Report format/guideline

PHM 314 Health System Management- I

BPH, Third Year, Fifth Semester

Course Description

This course design will help students to develop knowledge on the modern concepts and principles of management in general and public health management in particular according to current context of Nepal Government.

Learning Objectives

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

- Introduce the concepts of general administration, development administration and health administration.
- Explain the modern concept of administration and principles of management.
- Explain the components of public health administration.
- Introduce the function of health management information system

Course Contents

Unit I Introduction to Public Health Management and Administration 10 Hours

- Concept, scope, objectives, function and Principles of public health administration and Management
- Differentiate public health management from health care management, and medical care management
- Differentiate between public health Administration and Management
- Formulation process of different level of organizational goals and objectives: mission and vision statement, goal and objective setting
- Meaning of different models: classical (Planning, implementation Evaluation (PIE), planning, organizing, actualizing, evaluation (POAE), planning, organizing, managing, appraisal and control (POMA), planning, organizing, staffing, directing, controlling, reporting, budgeting, evaluation (POSDCORBE), planning, management (PM) and planning, organizing, leading, monitoring, evaluation (POLCE) and Scientific Model (System Approach- IPO Model)

Unit II Planning 6 Hours

- Definition, types of public health planning (Strategic/operational, short term/long term, Single-use and Standing, proactive/reactive, formal/informal)
- Methods of planning, and its elements
- Importance of public health planning
- Setting objectives: definition of objectives, hierarchy of objectives, guideline for setting objectives, benefit of objective setting
- MBO: concept, process, characteristics, strength and weakness
- Approaches of Planning: Need based Approach (NBA), Right Based Approach (RBA)

Unit III Organizing **6 Hours**

- Organizing: concept of organization and organizing, formal and informal organization,
- Basic element of organizing: centralization and decentralization, delegation of authority, division of work, structures and departmentalization
- Meaning characteristics and purpose of public health organizational structure
- Importance of organization structures
- Organization theory: Classical, neoclassical and modern (system approach and contingency approach)
- Concept of organogram: Functional and structural

Unit IV Staffing **4 Hours**

- Meaning, importance, objectives and process of staffing
- Component of staffing recruitment (selection, induction, training, and posting)
- Types of employments and job description (importance, elements)
- Capacity development of human resources
- Training need assessment, training types, and
- Performance evaluation of staff

Unit V Directing **6 Hours**

- Directing: introduction, components of directing (leading, motivating, communicating and coordinating)
- Process of delegating authority
- Motivational aspect of directing: concept and techniques of motivation of employees
- Directing: concept. types (authoritarian, Democratic and Laissez-faire) and characteristics, theories (charismatic, trait, behavioral and contingency), skill and abilities of a good leader
- Concept, objective and process/steps of controlling
- Component of controlling: supervision, monitoring, and evaluation
- Controlling function in health services administration
- Financial, Human resources and activities of controlling

Unit VI Co-ordination **2 Hours**

- Definition and purpose of coordination
- Type, techniques and constraints of coordination
- Advantages of coordination

Unit VII Recording and Reporting **12 Hours**

- Concept and importance of recording and reporting-
- Information Management System (MIS)
  - Concept, definition and objectives
  - Information Management System in Health Sector
    - Brief introduction of: HMIS, LMIS, TIMS (Training Information

Management System) FIMS (Financial Information Management System)

- Recording and reporting tools
- Indicators of HMIS and LMIS
- Flow of health information and feedback mechanism in Health System of Nepal
- Maintenance of health information at Local level, Province level and Federal level (concept of Data bank)
- Use of information at various levels (NPC, MoH, DoHS, Province and operational level)
- HMIS as a monitoring tool: monitoring sheets, their importance and maintenance, review meeting
- Strengths and weaknesses of current health information system in detail.
- Opportunity and Challenges of HMIS, LMIS in federal context

Unit VIII Budgeting **2 Hours**

- Introduction, process of budgeting
- Fiscal planning (budgeting, accounting and auditing) in brief.

Reading Materials

1. Agrawal Govinda Ram: Principle of management:
2. Harold Knooz, Heinz Weinrich: Essentials of Management, Tata McGraw-Hill Publication, New Delhi.
3. Shakya Karuna Laxmi: A text book of Public health Administration Vidhyarthi Publication
4. Dahal Achyut Raj: A text book of health management: Vidhyarthi Publication
5. Linda A Hill. “Becoming a Manager: How New Managers Master the Challenges of Leadership” Harvard Business School Press, 2003
6. Dixit, H. “Nepal's Quest for Health” Educational Enterprises, Kathmandu, 2003
7. Tripathy PC and Reddy PN “Principles of Management” Tata McGraw hill education Pvt. Ltd, New Delhi
8. Honion, Homian “Public Health Administration”.
9. Training manual of HMIS, LMIS, TIMS published by DoHS

PSD 314 Health System Management - I

BPH, Third Year, Fifth Semester

HRM 315 Human Resource Management

BPH, Third Year, Fifth Semester

Course Content

To enable the students in the planning, implementing and evaluating human resource for health programs. At the end of the course students are able to:

- Clarify the meaning, concepts, components, process and importance of HRD, in health.
- Develop appropriate HR Plans for different health programs in the country
- Carry out training need assessment, develop curriculum, conduct training and evaluates the training programs

Course Contents:

Unit-I: Introduction to HRD **10 Hours**

Meaning, scope, definition, evolution, external influences, trends and issues of HRD, HRD challenge; HRM in dynamic environment, HRM and Health Program Management; strategic linkage, its implication for attaining organization goal

Unit-II: Components of HRD **5 Hours**

Components of human resource development, application of HRD components in Nepali context

Unit-III: Human Resource Planning and Curriculum Development **10 Hours**

Curriculum development, approaches in HR planning for health, national health plans and HR implications; assessing demand and supply of health professionals; HURDIS, gender perspective in
health program and its HR implication.

Unit-IV: Different Training Approaches **15 Hours**

Importance of training, adult learning philosophy, and principles of learning

Training needs assessment and formulation of training objectives

Training design; content development, lesson plan, material development and delivery Training methods; OJT, case studies, role-plays, lectures, group discussion

Training cost and field logistics

Training evaluation and follow up

Training report writing skills

Participatory training approaches and their application in public health

Unit-V: Training Evaluation **8 Hours**

Objectives, methods and current practices in government, semi government and private health institutions, recent trends, feedback to health professional, 360 degree

appraisal, Development of supervision plan and tools. Evaluation approaches. Rewards and punishment approaches in HRD.

References

1. Alwan. A.. Hornby. P. The implications of health sector reform for human resources development.
2. Buchan. J. Dal Poz. M. Skill mix in the health care workforce. *Bulletin of the world Health Organisation* 80 (7), 2002.
3. Flahault- D. Poit- M. Franklin. A. *The supervision of health personnel at district level.* WHO. Geneva. Chapter 1 and 2. 1988.
4. HMGN, MOH. Human Resource Strategic Plan, 2003 -20017. Ministry of Health, Ramsaha Path, Katmandu. April. 2003
5. HMGN, MOH. Second long term Health Plan 1997-2017, 1998
6. Human Resource Management by Decenzo /Robbins -John Willey and Sons (Asia) P Ltd. 2 Clementi Loop # 02 -
01. Singapore 129809.
7. Martinez J. and Martineau T *Human Resources in the health sector: an international perspective. An issue paper.*
   London. DFID Health Systems Resources Center, 2002.
8. Shipp PJ. *WHO - Guidelines For Developing And Using Workload Indicators Of Staffing Need (WISN).* Initiatives Inc.. Boston. Massachusetts. USA. April 1998.
9. Van Lerberghe. W. Conceicao. C. Van Damme. W. Ferrinho. P. When staff is underpaid: dealing with the individual coping strategies of health personnel. *Bulletin of the World Health Organisation.* 2002. 80 (7): 581- 584
10. WHO. Training manna: on manager-sent or human resources for health, section i. par- A. WHO. Geneva. 1993.

PSD 315 Human Resource Management

BPH, Third Year, Fifth Semester

BPH

Third Year

Sixth Semester

PHM 321 Maternal and Child Health
BPH, Third Year, Sixth Semester

Course Description

This course will help to construct a basic concept of maternal and child health. Health issues among students by achieving introductory knowledge on maternal and child health. On completing this course students will be able to debate on maternal and child health in their profession career.

Learning Objectives

Introductory knowledge of the maternal and child health will be gained from this course. This course focuses on the concept, scopes, problems and issues of the maternal and child health. On the completion of the course, students will be able to:

- Define the maternal and child health.
- Describe the concept, history, scopes and basic content of maternal and child health.
- Enumerate the safe motherhood services prevalent in Nepal.
- Describe the problems, challenges and issues of maternal and child health.

Course Contents

Unit I: Maternal Health **26 Hour**

1. Definition of Maternal health
2. Components of maternal health
    a. Antenatal care(ANC)
    b. Natal care (NC)
    c. Postnatal care(PNC)
3. Sources of maternal morbidity and mortality information
    a. Vital records
    b. Hospital records
    c. Community identification of deaths
    d. Formal surveillance systems
    e. Maternal perinatal deaths review
4. Measurement of maternal mortality
    a. Maternal mortality ratio
    b. Maternal mortality rate
    c. Lifetime risk of maternal death
    d. Concept of near miss cases
5. Definition of maternal death
    a. Maternal deaths
    b. Direct obstetric deaths
    c. Indirect obstetric deaths
    d. Late maternal deaths
    e. Pregnancy-related death
6. Preconception care
7. Six pillars of safe motherhood
8. Indication for preconception care
9. Antenatal care (ANC)

a. Concept and definition of ANC
b. Objectives of ANC
c. Time and frequency of ANC
d. Essential ANC
e. Identification of high risk pregnancies
    i. Maternal factors
    ii. Bad obstetric history
    iii. Medical disorders
    iv. Warning signs
f. Planning for birth
g. Health education
h. Public health concerns of ANC

10. Intra-natal/natal care (NC)
    a. Concept and definition
    b. Objectives
    c. Common childbirth practices
        i. Home delivery and its consequences
        ii. Institutional delivery
    d. Delays for institutional delivery care
    e. Conditions for institutional delivery
    f. Skilled Birth Attendants (SBA)
    g. Essential obstetric care (EOC) and emergency obstetric care (EmOC)
    h. Public health concerns of NC
11. Postnatal care (PNC)
    a. Concept and definition
    b. Time and frequency
    c. Complication and danger signs in puerperium
    d. Public health concerns of PNC
12. Causes of maternal mortality
    a. Hemorrhage
    b. Infection (sepsis)
    c. Eclampsia
    d. Obstructed labor
13. Measures to reduce maternal mortality
14. Developmental milestones of Safe Motherhood services in Nepal
15. Safe motherhood policies, plans, programs and services existing in Nepal
16. challenges of maternal health care in Nepal

Unit II: Neo-natal and Child Health 14

1. Concept and definition neo-natal health and child
2. Neonatal health problems
    a. Status of neonatal health in Nepal
    b. Causes of neonatal death
    c. Essential care for newborn health
    d. National neonatal health strategy
3. Components of child health
    a. IMNCI (CB-IMNCI and health facility based)
    b. Nutrition
    c. EPI
4. Child health problems
    a. Malnutrition
    b. CDD/ARI
    c. Vaccine preventable disease
    d. Child abuse and trafficking
    e. Health concern of street children
5. World Declaration on the Survival, Protection and Development of Children
6. Child rights and international declarations on child rights: Convention on the Rights of the Child (1989)
7. Burden of child health diseases in Nepal
    a. Direct measurement
        i. Growth monitoring
        ii. Neo-natal and pre-natal mortality rate
        iii. Infant mortality rate
        iv. 1-4 year mortality rate
        v. Child mortality/under five morality
        vi. Child survival index
    b. Indirect measurement
        i. Proportion of low birth weight child
        ii. Proportion of protein energy malnutrition(PEM) children
        iii. Proportion of vitamin A deficiency(VAD) children
        iv. Proportion of nutritional anemia children
        v. Immunization coverage

Unit III: Child Health Policies, Plans Strategies and Programs in Nepal 8 Hours

1. Concept of child health promotions
2. Child health problems and intervention plans
3. Child health promotion strategies
4. Review of existing child health policies, plans and programs of Nepal (Immunization, nutrition, and CB-IMCI and newborn care/CB-IMNCI, early childhood development center (ECDC), mid-day meal for school children)

References

1. Say L, Chou D, Gemmill A, Tunçalp Ö, Moller A-B, Daniels J, et al. Global causes of maternal death: a WHO systematic analysis. The Lancet Global Health. 2014;2(6):e323– 33.
2. You D, Hug L, Ejdemyr S, Idele P, Hogan D, Mathers C, et al. Global, regional, and national levels and trends in under-5 mortality between 1990 and 2015, with scenario- based projections to 2030: a systematic analysis by the UN Inter-agency Group for Child Mortality Estimation. The Lancet. 2015;386(10010):2275–86.
3. Reproductive Health Epidemiology Modules | Publications and Products | Reproductive Health |

CDC [Internet]. [cited 2017 Jul 31]. Available from: https://www.cdc.gov/reproductivehealth/productspubs/modules.htm
4. Textbook of Public Health and Community Medicine, 2009 Published in Collaboration with WHO. Editor: RajvirBhalwar. [cited 2017 Jul 31]. Available from: https://www.researchgate.net/publication/282132865_Textbook_of_Public_Health_and_ Community_Medicine_2009_Published_in_Collaboration_with_WHO_Editor_Rajvir_B halwar
5. Divya A. Patel, MPH, Nancy M. Burnett, BS, Kathryn M. Curtis, PhD. Maternal Health Epidemiology. [cited 2017 Jul 31]. Available from: https://www.cdc.gov/reproductivehealth/productspubs/pdfs/epi_module_2_04__ tag508.p df
6. Park K. Park's textbook of preventive and social medicine. India, Jayapyr 1167, Publisher M/S BanaesidasBhanot. 2015.
7. Department of Health Services. Annual Report 2015/16 (Updated). DoHS, Government of Nepal.

PSD 321 Maternal and Child Health

BPH, Third Year, Sixth Semester

PHM 322 Health System Management-II
BPH, Third Year, Sixth Semester

Course Objectives:

To conceptualize the national health policy and how the policy has back reflected at the central, district and grass root levels. To develop awareness of the problems and issues facing the health service management at various levels. At the completion of the course students will be able to:

- Describe the history of the development of health services in Nepal.
- Develop understanding of the National Health Policy.
- Analyze the problems and issues of the health services management at the central, district and the grassroots levels.

Course Contents:

Unit-I: Historical Development of Health System in Nepal **10 hours**

- Concept of health systems development
- Principles of health systems development
- Different models of health systems development
- Brief history of development of health system in Nepal.
  - Traditional health care practices.
  - Ayurvedic, Homeopathic and Allopathic medicine in Nepal.
  - Naturopathy curative vs. preventive and promotional health services.
  - Traces of expansion of curative health centers and preventive and vertical health service programs.
  - Integrated health services: strengths, weaknesses, opportunities and threats.

Unit-II: National Health Policy and Plan 8 hours

- Concept of health policy
- National health policy
- Brief introduction to long-term health plans of Nepal
- Current Five Year Plan in health services.
- Overview of the health planning process in Nepal.
- Types of health planning
  - Problem solving
  - Program planning
  - Co-ordination of efforts and activities planning
  - Planning for the allocation for resources
  - Design of standard operating procedure and project planning
  - Decentralization policy

Unit-III: Provincial Health System Management 8 hours

- Organizational structure at various levels of health services
- Brief introduction of various health programs in terms of objectives activities.
  - Malaria control

- FP/MCH
- Tuberculosis control
- Leprosy control
- Expanded program for immunization
- Information education and communication.
- Control of diarrheal disease and ARI.
- Nutrition
- Environmental Health
- Health Training
- Kala-azar
- AIDS

- Need for, and establishment of co-ordination among health and health related program for effective delivery of health services alternative modality for establishing effective coordination.

Unit-IV: Provincial and Local Health Services Management 8 hours

- Study of provincial and local health services
- Functions
- Organizational structure
- Human resource for health.
- Job descriptions
- Budget
- Program
- Control and management of health care centers.
- Responsibility towards provincial health directorate.
- Supervision, monitoring and evaluation system.
- Review of health activities at different level
- Referral systems
- Coordination between district hospital and District Public Health Office and health posts.

Unit-V: Grassroots Health Services Management 8 hours

- Roles of PHC and health post and Out Reach Clinic (ORC)
- Functions
- Organization structure
- Manpower.
- Job descriptions
- Programs
- Responsibility towards DPHO/Health post.
- Supervision system.

- Philosophy, objectives, target, strength and weaknesses of different programs
  - FCHV
  - MCHW
  - TBA
  - Objectives, target strength and weakness of PHC outreach programs.
- Inter-sectoral coordination between different levels.
- Central Level
- Provincial Level
- Local Level

Unit-VI: Financial Management 6 hours

- Source of finance
- Annual budget and budgeting process
- Preparation of financial statement and its analysis

References

1. Department of Health Services, Nepal. Annual Report. 2074/75
2. Dixit H. *Quest of Health*, Educational Enterprise, 1999.
3. Joshi M, Adhikari R. Manual of drug and therapeutics. HLMC. 1996
4. Ministry of Health, Nepal. Health Policy of Nepal 1991, MOH, HMG/N
5. Ministry of Health, Nepal. Long Term Health Plan (1997-2017). MOH, HMG/N. 1998
6. Public Health Foundation: www.phf.org
7. PubMed (Medline) : http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?db=PubMed
8. UNICEF: www.unicef.org
9. United Nations Population Fund (UNFPA): www.unfpa.org
10. World Bank: www.worldbank.org
11. World Health Organization (WHO): www.who.org

PSD 322 Health System Management - II

BPH, Third Year, Sixth Semester

PHR 323 Public Health Research

BPH, Third Year, Sixth Semester

Course Description

This course will help the students to develop skill in identifying the researchable problems and conducting public health research coupled with the relevant technique of data collection and research report/paper writing process.

Learning Objectives

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

- Understand the key concepts on public health research
- Identify, analyze and write the statement of public health research problems
- Formulate the Research Questions, Objectives and Hypothesis
- Identify Variables, its Indicators and Scales of Measurements
- Design the Non-Interventional and Interventional Research
- Differentiate Qualitative and Quantitative Research Methods
- Understand Sampling Methods
- Plan out Data Collection Process
- Understand Research Ethics
- Write Research Report/Paper

Course Contents

Unit I Introduction **4 Hours**

- Definition of Research, Historical resume
- Characteristics of Research, Types of Research
- Use of research in public health

Unit II Health Research Problems and Hypothesis **4 Hours**

- Identification and Analysis of Research Problem
- Writing Statement of Research Problem
- Criteria of Research Questions, and Research Objective Formulation
- Research Hypothesis – Directional and Non-Directional Research Hypothesis

Unit III Variables and Indicator **4 Hours**

- Qualitative and Quantitative Variables, Categorical and Continuous Variables
- Scales of measurements
- Indicators, setting operational definitions
- Validity and Reliability

Unit IV Sampling Technique **4 Hours**

- Meaning of Sampling, Sampling Frame and its quality, Sampling Ratio, Sampling Units, Population Concept
- Types of Sampling – Non-Probability Sampling (Convenience, Quota, Purposive, Snowball), Probability Sampling (Simple Random, Systematic, Stratified, Cluster, Multistage, Probability Proportionate to Size)
- Sampling Errors

Unit V Research Methods and Designs **8 Hours**

- Qualitative and Quantitative Research Methods
- Research Design: Non-Interventional Research (Explorative, Case Study,

Case Series, Cross-Sectional, Longitudinal), Interventional Research (Pre-Experimental, Quasi-Experimental and True Experimental
– Completely Randomized Design, Completely Randomized Block Design, Factorial Design, Time Series Design)

- Basic Concepts on Clinical Trials: Phase Trials, Community Trials, Field Trials, Vaccine Trials, Drug Trials

Unit VI Data Collection Methods **8 Hours**

- Data Collection from Primary Sources – Observation Checklist Preparation, Participant Observation, Non-Participant Observation, Focus Group Discussion, In-Depth Interview, Personal Interview, Nominal Group Technique, Delphi Technique, Rapid Appraisal Technique, Questionnaire Preparation
  – Open Ended, Closed Ended, Structured/Semi Structured/Unstructured Questionnaire
- Data Collection from Secondary Sources – Data from Office/Institution Records, Journals, Annual Reports, Bulletins, Mid-line, Pop-line, Internets
- Pre-testing the Data Collection Tools and Making Work Plan

Unit VII Health Research Ethics **4 Hours**

- Basic Concepts on Research Ethics, and its Principals
- Milestones of Research Ethics in Nepal, and National Ethical Guidelines of Health Research

Unit VIII Research Report Writing **4 Hours**

- Difference between Research Report and Research Paper
- Styles of Writing the Research Report/Paper with Referencing
- Skeleton Model of Writing the Research Report – Preliminaries (Title, Approval Sheet, Acknowledgements, Table of Contents and Figures, Formatting, Paging Instruction), Body of the Report – (Introduction, Objectives, Literature Review, Methodology, Results/Findings, Discussion, Conclusions, Recommendations, References)

Unit IX Research Software **8 Hours**

- Concept and detail description on different statistical software (Epi-data, SPSS, WHO Anthro) used in data entry and analysis.

References:

1. Clough P and Nutbrown C. *A Student's Guide to Methodology*, Sage Publication, 2002.
2. Kumar R. *Research Methodology – A Step-By-Step Guide for Beginners*, Sage Publication, 1999.
3. Sapsford R. *Survey Research*, Sage Publication, 1999.
4. Smith PG, Morrow. *Field Trials of Health Interventions in Developing Countries*, 2nd Edition, 1996.
5. *National Ethical Guidelines for Health Research in Nepal*, Available at Nepal Health Research Council, July 2001.

PSD 323 Public Health Research

BPH, Third Year, Sixth Semester

PHC 324 Community Health Diagnosis
BPH, Third Year, Sixth Semester

Course Description

Learning to work effectively with communities is an essential part for public health scholars. With this regard, the course aims to impart the basic concepts and skills in diagnosing community health, plan & align programs to address the problems and build strategies for program implementation at community level. Also, this course has been designed to impart the basic concepts, procedures and the skills needed for collecting and analyzing the required information for community health diagnosis

Learning Objectives

At the completion of this course students will be able to:

- Define community health diagnosis and its underlying concepts applied in, different components; explain the process of community health diagnosis used in community health diagnosis survey
- Organize, design, collect community health and health related information, interpret, analyze and report them to present community health and development status
- Identify need as well as health problem of the community and select, organize, design, implement and report micro-health project findings.
- Present appropriate knowledge and skills of organizing, designing, collecting community health and health related information and analyze, interpret, present and report them to plan/program and implement the health actions for improving better community health and development status

Course Contents

Unit I Introduction to Community Health Diagnosis 6 Hours

- Definition, concept and difference between individual, family, clinical health diagnosis and of community health diagnosis
- Components of community health diagnosis
- Community health diagnosis survey and disease surveillance
- Process of community diagnosis
- Role and importance of community health diagnosis in Community health development
- Scope and uses of community diagnosis in learning/education and training purposes

Unit II Indicators used in Community Diagnosis 12 Hours

- Demographic, Socioeconomic and Socio-cultural Indicators
- Environmental health Indicators
- **Disease Burden and the Community**
  # Vital rates, ratio and proportion in community diagnosis
  # Morbidity indicators in community diagnosis
  # Mortality indicators in community diagnosis
  # Health service indicators in community diagnosis
  # Population change and fertility indicators in community diagnosis

- **Planning the Community Diagnosis Health Survey**
  # Organization and design a community diagnosis survey plan
  # Development of data collection, interpretation, analyzing, reporting tools
- **Planning a Health Intervention and Solving the Problem**

Process of planning (identification, and prioritization) of community health

intervention
Process problem solving and health intervention planning
Process of selecting, organizing, designing, implementing and reporting a mini/micro-health intervention at the field

Unit-III: Residential Community Health Diagnosis Field Practice 12 Hours

- Preparation of residential community diagnosis field practice plan
- Method and use of good rapport building
- Concept and practice of community mapping
- Need and the use of resources (internal/external, local) in community diagnosis field survey
- Importance of surveyors' group dynamics in community mobilization
- Need of self-review on designing and implementation of CD survey plan
- Preparing a preliminary survey findings report and discussion notes

Unit-IV: Micro health project 8 Hours

- Process of need identification and local resources mobilization
- Process of priority setting
- Development of MHP plan
- Implement MHP
- Evaluation of MHP

Unit V: Monitoring and Evaluating Community Health Diagnosis 6 Hours

- Monitoring and Evaluation and its importance in community health diagnosis
- Use of appropriate tools to monitor progress of community health diagnosis project
- Evaluate community health diagnosis aligning with different stages of evaluation

Unit V: Report Preparation and Write Ups 4 Hours

- Concept and structures of field reports/community health diagnosis reports
- Setting up of general styles and formatting of a community health diagnosis report.

Reading Materials

1. Muecke MA. Community health diagnosis in nursing. *Public Health Nursing*. 1984;1 (1) :23-35.
2. New York State. New York State. [Online]. 2006 [cited 2018 June 1. Available from: https://www.health.ny.gov/statistics/chac/10steps.htm.
3. Kafle M. A Textbook of Community Health Diagnosis. Bhotahity, Kathmandu: Vidyarthi Pustak Bhandar; 2010.
4. Quinn SC. Teaching community diagnosis: integrating community experience with meeting graduate standards for health educators. *Health Education Research*. 1999;14(5):685-96.
5. Hale C, Shrestha I, Bhattacharya A. Community diagnosis manual. *Health Learning Materials Centre: Kathmandu*. 1996.
6. Bhalwar R, Vaidya R. Text book of public health and community medicine: Department of Community Medicine, Armed Forces Medical College; 2009.
7. Bennett FJ. Community diagnosis and health action. A manual for tropical and rural areas: Macmillan Press Ltd., 4 Little Essex Street, London WC2R 3LF; 1979.

PHC 608 Residential Field Practice (Community Health Diagnosis)
BPH, Third Year, Sixth Semester

Course Description

This course, under Public Health Application strand, helps to acquire basic and practical skills to inquire the public health problem and provide public health solutions with use of public health tools, interventions and management. The course objectives will be met with group processes, community organization, participation and action. In addition, the students complete the task by collecting and analyzing primary and secondary data and intervention based on the principles and strategies of health promoting home (with family health approaches) and communities (villages and cities) independently. However, the course/field coordinator and the program coordinator would coordinate facilitate for the sites and local leaders. The course is completed with 30 days (1 month) residential field excluding orientation and travel, so that it makes 40 working days package as in the following progressive order:

- 1-6 (6) days: Preparation workshop/Orientation: social mapping, rapport building, community organization and development, development of in-depth data collection/evaluation tools (both qualitative and quantitative), field action plan, review of software (entry and analysis: SPSS, Epi-Data, AnthropPlus, MS-Excel);
- 7-8 (2) days: Departure and arrival at the community site;
- 9-38 (30) days: will be subdivided as (draft report writing should progress as the program progresses):
    a. 9-11 (3) days: Contacting local leaders of communities, transit walk and Preparation of 1st Community Assembly (rapport building and social mapping);
    b. 12 (1) day: 1st Community Assembly;
    c. 13-22 (10) days: Data collection;
    d. 23-27 (5) days; Data entry and analysis and interpretation;
    e. 28-29 (2) days: Preparation of 2nd Community Assembly (Presentation of findings);
    f. 30 (1) day: 2nd Community Assembly;
    g. 31-32 (2) days: Prioritization/selection of health problem, Planning and development of implementation, monitoring and evaluation plan for Micro-health projects;
    h. 33-34 (2) days: Conduction and monitoring of MHPs;
    i. 35 (1) day: Evaluation of MHPs;
    j. 36-37 (2) days: Preparation of 3rd Community Assembly (Findings from survey data and MHPs);
    k. 38 (1) day: conduction of 3rd Community Assembly.
- 39-40 (2) days: Departure from the community and arrival at school/college
- Final exhibition on community health diagnosis process and oral presentation in School/College for final evaluation.

Learning Objectives

The purpose of this course is to acquire practical and applied skills of program planning, implementing, monitoring and evaluation of public health program with prevention, promotion, protection, control and encouragement for early detection and treatment of diseases (P3CE). In order to imply these, along with the theoretical subjects in sixth and previous semesters, each student is required to collect in-depth quantitative data from 15-20households and qualitative data as per saturation need. During data collection, students also intervene to promote the health of the community people with health promotion approaches at household level with family health approaches. Upon the completion of the course, students will be able to:

- Rapport with the community people and develop social map;
- Develop quantitative and qualitative research/survey tools;
- Collect and analyze data in a participatory way;
- Prioritize the action program with prioritization grid in a participatory way;
- Develop plan of action (Micro-health project) based on health promotion theories/models;
- Implement, monitor and evaluate MHP with community organization principles;
- Organize and conduct at least 3 (three) community assemblies in the communities;
- Present the findings in community and school/college; and
- Prepare and submit the report in a prescribed format.

Course Contents

- Orientation/Workshop
    a. Social mapping (PRA/PLA, Transit walk, problem tree, prioritization of problem with different tools, development of social map with local resources)
    b. Community organization, participation and action
    c. Review of Epi-data (for making views/questionnaires), AnthroPlus for nutrition related data entry and analysis, and SPSS and MS-EXcel (for analysis)
    d. Review of qualitative data collection, entry, and analysis
    e. Planning, implementing and evaluating micro-health project in the community with health promotion approaches
    f. Development of survey tool including record review guideline and/or case study guideline
    g. Pretesting the tool
    h. Plan of action for field activities
- Organizing the Community
- Ocular survey for site selection
- Prioritization of actionable program for intervention
- Development of micro-health project based on data (evidence) and model/theory of health promotion
- Plan of action for intervention, monitoring and evaluation
- Monitoring and evaluation of program
- Presentation in the community
- Presentation and exhibition at school/college
- Report format/guideline

Reading Materials

1. Hale C. Community Diagnosis Manual. TUTH, Kathmandu.
2. State of North Carolina, Dept of Health and Human Services. (1990). Community Assessment Guide Book.Healthy Carolinians. North Carolina Community Health Assessment Process.

3. Bennett, F. J. (1980). Community Diagnosis and Health Action: Manual for Tropical and Rural Areas (Macmillan tropical community health manuals). Macmillan Education
4. Ross, M. G., Lappin B. W. (1967). Community Organization. Harper & Row.
5. D Nutbeam, E Harris, W Wise. Theory in a nutshell: a practical guide to health promotion theories. 2010. Sydney, AU. McGraw-Hill
6. JF McKenzie, BL Neiger, R Thackeray. Planning, implementing, and evaluating health promotion programs: A primer- 2005
7. MoHP, GoN. NDHS (2016). Nepal Demographic and Health Survey
8. Periodic reports of different relevant ministries, local line agencies and organization
9. Epi-data manual

s

BPH

Fourth Year Seventh Semester

PHF 411 Health Finance and Economics

BPH, Fourth Year, Seventh Semester

Course Description

To develop the knowledge and skills on micro and macro level economic intervention, and appraisal in health. At the end of the course, students will able to:

- Clarify the basic concepts, terms, contribution and techniques of health economics.
- Illustrate and state the roles of demand and supply in health
- Identify the sources of financing in health sector and analyze the equity, efficiency, and sustainability of various alternative financing schemes

Course Contents

Unit-I: Introduction **4 hours**

- Meaning and scope of health economics
- Similarity and differences between economic and health economics
- Principles and definition of the terms commonly used in health economics
- The economic agent - producer, consumer and the role of the government

Unit-II: Micro and Macro economic in Health 4 hours

- Concept of Micro and Macro economics in health
- Application of Micro and Macro economics in health
- National Income Accounts, National Health Accounts , GDP, GNP, Inflation
- Real vs. Nominal Price

Unit-III: Micro Economics Tools for Health 8 hours

- Demand, Supply and Pricing System
- Market Equilibrium
- Elasticity of Demand and Supply: Price Elasticity, Cross-Elasticity, Income Elasticity
- Production and Distribution of Health Care
- Production function
- Cost function and cost of delivery health care

Unit-IV: Markets and Market Failure in Health Care 4 hours

- Market and How does in work
- Market Mechanism in Health Care
- Public Goods, Exernalities
- Role of Government and Market in Health Care

Unit-V: Economic Evaluation 12 hours

- Concept and application of economic appraisal
- Cost concepts: Direct, Indirect, Average, Marginal cost, Total cost, Unit cost, Capital and Recurrent cost, Fixed cost, Variable cost, Shadow price, Opportunity cost.
- Cost analysis: Cost classification, Costs apportion, NPV, Discount factor, Annualization factor, IRR, Cost recover, Break-even point.

- Tools and techniques of economic appraisal: Cost minimization analysis, cost effectiveness analysis, cost benefit analysis and cost utility analysis
- Health consequences, its nature and calculation, output, effect and impact: calculation of in single and composite indicator (DALY, QALY) etc.

Unit-VI: Health Care Financing 13 hours

- Meaning and scope of health care financing
- Alternative health care financing
- Equity: Concept of Equity in Health, Vertical Equity, Horizontal Equity, Measuring disparities in health, Gini Coefficient, Kakwani Index
- Efficiency: Concept of Economic Efficiency, Allocative Efficiency, Technical Efficiency
- Sustainability of health care financing
- District Health planning, resources allocation and systematic cost reduction
- Concept of user charge and its application
- Evolution of insurance and health insurance
- Social Health Insurance, Community Health Insurance, Micro Health Insurance and Private Health Insurance
- Health insurance in low and middle income countries
- Risks in Health Insurance: Moral Hazard, Adverse Selection, Cost Escalation, Fraud and Abuse
- Risk Management: Co-payment/Co-insurance, Indemnity Payment, Cream Skimming, Re-insurance
- Payment Mechanism: Capitation, Fee-for-Service, Salary Global Budget, DRG
- Premium setting, Designing benefit package and fund management
- Health insurance options-universal coverage to development of social insurance
- Managed care and health maintenance organization

Unit-VII: Health Sector Reform 3 hours

- The forces of driving health reform
- The health reform cycle
- He five control knobs: Financing, Payment, Organization: Macro Strategies: Changing Public – private mix, changing provider mix, decentralization, contracting: Micro Strategies: Corporatization and autonomization, improving public sector performance, altering the distribution of inputs, Regulation, and Behavior

References:

1. Creese A., Parker D. *Cost Analysis in Primary Health Care*, WHO, UNICEF, Aga Khan Foundation 1994.
2. Pindyck, Robert S and Rubinfeld, Daniel L. Microeonomics, 5th Edition
3. Michael Drumond and etal. Methods for the Economic Evaluation if Health Care Program. Oxford University Press, 2nd Edition, 1998
4. Cam Dondalson and Karen Gerard, Economics of Health Care Financing: The visible Hands. The MacMillan Press Ltd. 1993
5. Andrew Green. An Introduction to Health Planning in Developing Countries. Oxford University Press.

6. Thomas E. Getzen. Health Economics: Fundaments and Flow of Funds. Temple University USA. John Wiley and Sons, 1997
7. Commission on Macroeconomic and Health (CMH) Report WHO, Geneva 2001
8. Dror DM, Preker AS. *Social Reinsurance, A New approach to Sustainable Community Health Financing*, ILO and the World Bank, 2002
9. Ministry of Health, Public Expenditure Review of Health Sector 2003,2004.
10. Santerre, Neun SP. *Health Economics-Theory and Practice*, 1996
11. HMG Nepal. Fiscal and Monetary Policy
12. Witter S., Ensor T., Jowett M. *Health Economics for Developing Countries-practical guide*. The University of York.
13. WHO. *Economic Evaluation*, 2000.
14. The World Health Report
15. The World Bank Institute, Introduction to the concepts and analytical tools of Health Sector reform and sustainable financing

PSD 411 Health Finance and Economics

BPH, Fourth Year, Seventh Semester

PHA 412 Public Health Acts and Policies

BPH, Fourth Year, Seventh Semester

Course Description

The course aims to provide integrated knowledge and stimulate interactions among students around emerging and remerging health issues facing the health of the nation and the world. This course helps to develop conceptual foundations of current Public Health Laws in Nepal. Learning ethics can help them to apply ethics in their profession

Learning Objectives

The course is aimed to develop the competencies in public health so that the graduates can develop their career as a public health professional in either a service or an academic setting. Upon the successful completion of the course students will be able to:

- Explore the public health approaches
- Explore the emerging and remerging diseases at national and international level.
- Describe the main legal and ethical principles relevant to public health work
- Explain the national health related plan and policy

Course Content:

Unit I: Public Health 10 Hours

- Review of Concept of Public Health
- Public Health approaches
- Domains of Public Health
    - ***Thematic Domain***, such as nutrition, environmental health, life-style, reproductive health, MCH, communicable and non-communicable diseases
    - ***Public Health core action domain***, such as health promoting action, health risk factors, injuries and disease prevention actions, health protecting actions, epidemic control actions, and actions leading to early detection, treatment and compliance to treatment resume
    - ***Public Health Intervention domain,*** such as health education, health promotion strategies, policy and legal intervention, community organization and participation
- Public health achievements and future challenges in Nepal

Unit II: Preventive Health 6 Hours

- Concept and Scope of Preventive Health
- Practices of levels of prevention in Nepalese context (Public and Private)
- Concept and examples of Preventive health behavior (PHB)
- Preventive care versus preventive services
- Public Health versus preventive medicine, community medicine, Clinical medicine, social medicine and community health

Unit III: Public Health Acts and Policies 24 Hours

- Overview of Public health laws, policies, plans, strategies with revision
- Concept, definition of Public health laws; sources of public health laws
- Laws related to public health:

- Environmental health laws of Nepal: Definition, aims, environmental protection act including Kathmandu Declaration 2015
- Occupational health laws of Nepal
- Consumer Rights, Consumer Act
- Patient Rights

- Plan & policies related to health
  - Health Policies: National health policies 2071(focused on Public health aspects)
  - Health plans: National health sector plans: NHSP I, NHSPII, NHSS 2015-20
  - Second long-term health plan
  - Health strategy: National health sector strategy
  - Social health insurance scheme: Concept, objectives, coverage
- International declarations:
  - Alma Ata declaration of PHC (1978) including HFA
  - Universal declaration of human rights 1948
  - Women: 1979-(CEDAW) of described as an international right for women.
  - Convention on the right of child
  - Ageing: Elderly health problems, International plan of action on ageing (Madrid Declaration)
  - Disable: Declaration on the rights of disabled person
- International Conferences/Assemblies in Public health
  - Ottawa Charter, Jakarta Declaration, Bangkok Charter, Nairobi Declaration
  - ICPD Cairo declaration: introduction, preamble, principles and action
  - Beijing conference: Introduction, objectives and actions including 12 critical areas.
  - Habitat 2nd Istanbul 1996: Introduction, goals, objectives, global plan of action
  - MDG, SDGs: introduction, goals, target and indicators
  - Peoples Health Assembly(PHA)
- Public Health Politics and Controversies
  - Primary health care: The root for health politics
  - Selective versus comprehensive PHC
  - Executive, Legislative, and judiciary aspects of Health in Nepal

Unit IV: Public Health Ethics **8 Hours**

- Ethics and medical ethics concept
- Public health ethics: Definition, Concepts and Contribution of public health ethics
- Public health professional ethics

Reading Materials

1. Freudenberg N, Eng E, Flay B, Parcel G, Rogers T, Wallerstein N. Strengthening individual and community capacity to prevent disease and promote health: in search of relevant theories and principles. Health Education Quarterly 1995; 22 (3): 290-306.
2. Friis RH, Sellers TA. Epidemiology for public health practice. 2nd edition Gaithersburg, MD; Aspen Publication, 1999.
3. Institute of Medicine. The Future of the Public's Health in the 21st Century. Washington DC: National Academy Press, 2003.

4. Lasker RD. Medicine and Public Health: the power of collaboration. New York NY: The New York Academy of Medicine, 1997.
5. Park JE and Park K. Text book of social and preventive medicine, 23rd edition, 2015.
6. Schwab M, Syme SL. On Paradigms, Community Participation, and the Future of Public Health. American Journal of Public Health.1997; 87 (12). 2049-2051.
7. Bernard J. Turncock. Public Health: What It Is and. How It Works. Published by Jones and Bartlett.
8. Public Health Ethics Training Materials: Good decision making in real time: Public health ethics training for local health department: Department of health & human services, CDC, 1 August 2012.
9. Annual Report. Department of Health Services, MOH, Government of Nepal, 2072/73. Available from dohs.gov.np/wpcontent/uploads/2016/06/Annual_Report_FY_2071_72.pdf
10. Ministry of Health and Population, National Health Policy, 2071. Available from 2014_Nepali:http://nnfsp.gov.np/PortalContent.aspx?Doctype=Resources&ID=69
11. Nepal Public health association: www.nepha.org.np/public-health-incicator
12. PubMed(Medline):http://www.ncbi.nlhm.nih.gov/entrez/query.fcgi?=PubMed
13. World health Organization(WHO): www.who.int
14. World Bank: www.worldbank.org
15. The Politics of Primary Health Care. IDS Bulletin Volume 14, Issue 4 October 1983 Pages 27–37

PSD 412 Public Health Act and Policies

BPH, Fourth Year, Seventh Semester

PHM 413 Disaster Management

BPH, Fourth Year, Seventh Semester

Course Objectives:

To explore the concept on disaster management and design the study for emergency disaster based controlling mechanism. At the completion of the course students shall be able to:

- Understand the students on disaster management.
- Facilitate the student on epidemiological aspects of conflict and disaster management
- Train the students on field work management.

Unit 1: Introduction of Disasters Management *16 Hours*

- Meaning of disaster and disaster management
- Distinguishing between an public health in emergency and a disaster situation
- Types of natural and non-natural disasters
- Impacts and Implications of disasters on your region and environment

Unit 2: Disaster Management Cycle

- **Mitigation,**
  - Disaster Mitigation
  - Mitigation strategies
  - Hazard identification and vulnerability analysis
  - Disaster and Development
  - The impact of disasters on development programmes
  - Vulnerabilities caused by development

- *Preparedness,*
  - Disaster Preparedness and planning, Element of preparedness, disaster forecasting
  - Overview of Disaster Risk Reduction (DRR) process

- *Response and recovery*
  - Disaster Response
  - Aims of disaster response
  - Disaster Response Activities in Nepalese context
  - Modern and traditional responses to disasters
  - Disaster Recovery and plan
  - Critiques on Disasters as opportunities for development initiatives
  - Disaster management mechanism of Nepal from peripheral to central, Overview activities of disaster management activities of different organization of Nepal

Unit 3. Disaster Associated Health Issues – Emergency Health Services and Diseases

- Introduction
- Emergency Health Services in Disasters

- Infrastructure and procedures in accessing emergency situations
- Common Communicable diseases in disaster situations
- Risk factors contributing to the spread of communicable diseases and outbreaks
- Preventing and reducing outbreaks of communicable disease in emergency/disaster settings
- Rapid Assessment
- Importance Health Education in risk reduction of disaster

Unit-II: Epidemiological aspects of Conflict and Disaster Management 26 hours

- Application of epidemiology during conflict and disaster
- Epidemiological studies during the conflict and disaster
- Consequences of conflict and disaster Casualties
  Disease outbreak
  Famine and starvation
  Higher morbidity and mortality

- Disaster Planning, Preparedness and prevention Short-term management:
  - Management of health problems.
  - Resources mobilization. Long-term management:
  - Forecasting of disasters
  - Conflict management

References

1. K. Park, Preventive and social medicine, latest edition
2. Disaster management guideline, MOHP
3. Disaster management guideline, EDCD, MOHP
4. Disaster operational and response manual
5. Guidance Note 2011 for Preparing Disaster Preparedness & Response Plan
6. Building development code, MPPC
7. Urban health policy, MOHP
8. Waste management committee, MOLD
9. Plan, policy, and guideline of municipality
10. Public health guide in emergencies
11. Nepal Health Sector Programme Implementation Plan II (NHSP IP2) 2010-2015
12. Annual DDR report
13. Waste management guideline, WHO

PSD 413 Disaster Management

BPH, Fourth Year, Seventh Semester

PHR 415 Public Health Research Informatics

BPH, Fourth Year, Seventh Semester

Course Introduction

The course imparts the basic knowledge and understanding on computer and Information technology, which will provide a better perspective in, managing public health care system, and health research.

Course Objectives

- Identify appropriate HW and SW for their use
- Acquire knowledge on national health data base and surveillance system
- Able to use different search engine on web
- Handle some database, reference software
- Handle some statistical software
- Interpret the statistical outputs

Contents

Unit 1. Introduction of Information Technology 5 hrs

Introduction, history, Architecture, System, Hardware, Software

Unit 2. Operating system (OS) 5 hrs

Introduction to Different types of Operating systems, Memory Management, File Concepts, Access and Allocation Methods, Free Space Management. Disk Structure, Disk Scheduling and Disk Management.

Unit 3. Public health and IT 13 hrs

Introduction to public health informatics, Principles of using technology, role of the public health professional in information technology, electronic communication, Information technology and organizational change in PH, National Health Information Management System, IT in public health surveillance, Future directions in public health information technology applications , Ethics in IT, Security, privacy and legal issues of IT, Barriers to IT, IT Disasters, On-line research for PH, WWW site and use in PH, Managing GIS, Evolution of information technology management in PH, Management information system, Strategic planning for information management, Challenge of teaching information technology in PH

Unit 4. Database management 5 hrs

Introduction to database systems, Database Administration - Database system architecture and data dictionary- Relational, Hierarchical, Network Models

Unit 5. Data analysis 20 hrs

Introduction of different commercial and non-commercial data analysis (STATA, SPSS, R project, QGIS, ATLAS ti) and reference managing software (Endnote, Zotero and Mendeley) and hands on practice in some software, Introduction to different software used by govt. and non-government organizations for surveillances, mapping, projection, modeling

Teaching learning method

Class lectures, practical problem solving sessions

PHR 415 Comprehensive Field Practice

BPH, Fourth Year, Seventh Semester

Course Objectives:

To develop skills, which will make student competent public health professional with the ability to identity health problems and needs in district health system. At the successful completion of the course, students will be able to:

- Explore health problems in the districts, including determinants of the problems to prepare a district health profile.
- Assess existing or potential resources for addressing health problems, as well as constraints, which may hinder successful application of solutions.
- Prioritize health needs of the district and generate appropriate strategies for health.
- Co-ordinate health and non-health sector activities.

Course Contents

Unit-I: Orientation on comprehensive field practice **15 hours**

- Rationale for selecting districts
- Orientation for fieldwork and logistics.
- Orientation to the field activities.
- Orientation on national health indicator.
- Over view and networking of district level organizations (DPHO, DDC, Water Supply, Agriculture, Education, Red Cross, CDO, FPAN, NGO, INGO, hospital and other health related organizations of the district) which are directly and indirectly related to health and related issues of the district.

Unit-II: Preparation of Management Profile of District Health Problem 15 hours

- Major health problems of the district.
- Health planning Process and programmes/projects in district level
- Health services organization structure.
- Staffing patterns
- Coordination with other related organizations (line agencies, NGOs, INGOs).
- Supervision and monitoring system.
- Budgeting
- Health management information system.
- Logistics system
- Recording and reporting system.

Unit-III: Critical Appraisal of Health Management Profile 55 hours

- Analyze the status, strength and weaknesses of each of the management components mentioned above using appropriate models.
- Observe management system work activities in the organizations towards goal achievement.
- Recommend for alternative strategy or re-strengthening the management component of overcoming the weakness for better management.
- Organize a seminar to present a health management profile of organization in district/College

Unit-IV: Mini- action Project 20 hours

- Apply the knowledge and skills learned in various disciplines of health sciences (epidemiology, bio-statistics, health education, nutrition, school health, health & environment, family planning, MCH, etc) to develop mini-action project in a group.
- Develop a mini-action project with objectives formulated on the prioritized basis of problem and health needs.
- Implement the mini-action project developed and discrimination of findings at district level. Evaluate mini-action project.

Unit-V: Preparation and Submission of Field Study Reports 30 hours

- Prepare baseline demographic and health profile of the district acquired from secondary data on the basis of which write additional specific papers.
- Develop a plan to improve the effectiveness of specific aspect of the district health system.

Course Evaluation:

Comprehensive Field Practice	• Evaluation by Local Field Supervisor ..... 5 % • Evaluation by Campus/Institute Supervisor 20 % • District Seminar ……. 10 % • Presentation of Field Work at Campus/Institute 15 % • Evaluation of Written Report (District Profile)……20 % • Micro-Health Project…..... 10 % • Oral Defense of Written Report and Filed Work ….20 %

SEM 415 803 Health Seminar

BPH, Fourth Year, Seventh Semester

Course Objectives:

To provide students the knowledge and practice of public health seminar activity. To enable them to carry out researches and solve research related problems. To help them in presentation and defend their work. Upon successful completion of the course, the students shall be able to:

- Search relevant scientific literature
- Develop a seminar presentation
- Develop skills in poster and oral presentation

Course Contents

Unit 1. Assessment of health situation

Identify different sources of relevant health information within and outside health sectors,

Collect necessary additional primary information using different techniques and tools,

Review and analysis of health and health related information collected from different sources,

Observe the process of health and health related data collection, analysis and reporting, Assess environmental determinants of health: drinking water situation, sanitation, health hazards, food and nutrition, socio-cultural determinants and factors affecting health.

Unit 2. Policy and planning to address the health situation

Participate in planning and decision making processes and observe the steps and process,

Interact with relevant people about the policy development and planning health services,

Review of relevant documents about the health policy and planning.

[Secondary data based the paper will have been selected and done the poster or oral presentation, individually]

BPH
Fourth Year
Eighth Semester

PHI 421 Internship
BPH, Fourth Year, Eighth Semester

Course Introduction

Bachelor students in public health are given theoretical inputs and some practical exposure to the community and districts to understand fundamentals of different disciplines in public health and acquire relevant skills. This course is designed to provide the students with a full opportunity to experience and practice these knowledge and skills in extended way as a public health graduate.

The course is developed considering the core functions of public health: assessment of the situation, development of policies and assurance of service delivery.

Course Objectives

Objective of the course is to help the student to

1. Acquire skills to assess and describe the situation of public health problems and issues
2. Describe public health services delivered at different levels.
3. Acquire skills to manage and administer these public health services

The course components and activities

The course consists of four main components

1. Assessment of health situation
2. Policies and planning to address the health problems
3. Public health service delivery
4. Public health management and administration

Activities of the students during the practicum will be in relation to each of these course components.

Course Contents

Unit 1. Assessment of health situation

The student will carry out the following activities Identify different sources of relevant health information within and outside health sectors,

Collect necessary additional primary information using different techniques and tools,

Review and analysis of health and health related information collected from different sources, Observe the process of health and health related data collection, analysis and reporting,

Assess environmental determinants of health: drinking water situation, sanitation, health hazards, food and nutrition, socio-cultural determinants and factors affecting health.

Unit 2. Policy and planning to address the health situation

The students will be engaged in following activities Participate in planning and decision making processes and observe the steps and process,

Interact with relevant people about the policy development and planning health services,

Review of relevant documents about the health policy and planning.

Unit 3. Public health services

The students will carry out the following activities Review of public health services - promotive, preventive, curative, and rehabilitative provided by government, non government and private sectors; formal and non formal; modern, traditional, indigenous services.

Participate in different public health service delivery process in the community and in the health service delivery facilities.

Review of documents on the public health service delivery.

Assess distribution, adequacy and access to health services.

Assess equity, gender and social inclusion in health services.

Unit 4. Public health management and administration

The students will carry out the following tasks Participate and assist to management – materials, human resource and administration.

Participate in evaluation, supervision and monitoring processes.

Participate in the process of coordination with other health and non health sectors.

Review of emergency and disaster preparedness and planning.

[Note: Students will prepare a comprehensive report of each of the unit]

Teaching learning method

An orientation programme will be organized to provide the information about the objectives and methods of practicum prior to placement. The students will be placed in different government and non governmental institutions, where the required learning facilities, as mentioned above, are available. Within the institution, student will be rotated in relevant sections or units closely work with the staff of the section. If required, student can be placed in other relevant institution for short period of time for specific purpose as demanded by the course. The total placement for practicum will be 3 months. Each of the students will be supported by a local mentor. The students will be supervised and provided with inputs and feedbacks by the faculty of Science and Technology .

The student will periodically present own observation and impression to the concerned and relevant people for sharing and validation.

The student will be provided a manual explaining the details of learning approaches and processes.

Evaluation

1. The students will be evaluated in different stages and by different people. During the placement in practicum local supervisor or mentor and RJU faculty, during supervision, will evaluate the students.

2. The report of the student will be evaluated by the Department of Public Health.

3. These evaluations will be considered internal and will carry 40%

4. RJU **(Faculty of Science and Technology)** will conduct the final evaluation as oral viva, which will carry 60% of the total marks of practicum.

References

1. Dixit H. “Quest for Health” 2nd Edition, Educational Enterprise, 2003. 2. WHO. “Policy Papers on Health Nepal” WHO & MoHP/GoN/Nepal, 2007. 3. Previous report on District Health Management, project reports, annual reports, progress reports and relevant documents.

PHR422 Dissertation
BPH, Fourth Year, Eighth Semester

Course Objectives:

To provide students the knowledge and practice of public health research activity, To enable them to carry out researches and solve research related problems. To help them in writing thesis and defend their work. Upon successful completion of the course, the students shall be able to:

- Search relevant scientific literature
- Develop a research proposal
- Employ appropriate data collection techniques and tools
- Manage collected data
- Analyze data with appropriate statistical techniques
- Write thesis
- Defend the findings

Course Contents **192 Hours**

Unit-1: Process of research

- Selection, presentation and finalization of research title Development of proposal
- Presentation of proposal
- Receiving of approval and ethical consideration letter from concern institution and other institution if necessary
- Approval taken from concern authority of field activation
- Collection of data
- Data coding, decoding, feeding and cleaning
- Analysis of data
- Development of report, correction and re-correction from concern guide
- Development of draft report
- Presentation of finding
- Attending the final examination
- Incorporation of feedback
- Development of final report
- Submission of final report 3 copy of hard black binding to public health department

College should be provided the research guide individually and all the students must visit with respective guide for necessary guidance and keep recording of visit, purpose of visit, date of visit with signature). This record must be bring in final examination for evaluation of individually.

Evaluation:

Internal: 50% weight

Thesis Defense and Viva: 50% weight