



Bachelor of Public Health (BPH)

**Syllabus
2005**

Faculty of Science and Technology
Pokhara University

BACHELOR OF PUBLIC HEALTH (BPH) PROGRAM

GOAL AND FOCUS

Public health approach envisions to improve the lifestyles of the people. Therefore it is known as an important 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 competently work for the prevention of the diseases and promotion of diseases control strategies. In this light, introduction in 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.

The major goal of the program is to produce public health graduates of highest academic, technical and practical skill.

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 term paper 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 OPPORTUNITY

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 three fold burdens of diseases (communicable, lifestyle related and poverty). In order to cope with this complex situation, development of public health graduates has become inescapable. Very 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:

- University (Education and Research)
- Health Organization
- Health Center
- Hospital
- Health Research Council

AN INTRODUCTION TO BPH PROGRAM

A. GENERAL

1. Title

The title of the program is Bachelor of public Health (BPH).

2. Objective

The objective of the BPH program is to produce competent and need based public health graduates.

3. Course Structure:

- The program follows the credit system. Each course is assigned a certain number of credits depending generally upon its lecture, tutorial and practical work hours in a week. In theory subjects, one lecture per week is assigned one credit as a general rule.
- Three credit hours of theory is equivalent to 48 hours lecture and one credit hour of practical is equivalent to 45 hours practical is one semester.

4. Course Coding

Each course is identified by initial letter of the course title followed by three digit number and credit hours after decimal i.e. Introduction to Public Health (IPH 101.2), Term Paper I (TPPI.1).

5. Normal and Maximum Duration of Stay in the University

The normal duration for completing the BPH course is four years. In exceptional case, however, the student is allowed normal duration plus two years to complete the course. If a student is unable to complete the course within six years from the time of admission, the University registration is annulled.

6. Academic Schedule

The academic session consists of two semesters per year. Generally the Fall Semester (September-February) starts in September and the Spring Semester (February-August) begins in February, however it may differ slightly in any particular year.

7. Medium of Teaching and Examination

The medium of instruction and examination for BPH program will be English.

B. 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) Higher Secondary Level (10+2 Science streams) or Proficiency Certificate Level (PCL Science), or Certificate in Health Sciences or equivalent as recognized by Pokhara University with at least 50% marks. 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.

3. Student Evaluation

The student's academic performance during a semester will be evaluated internally (sessional work) and externally (the final examination). The sessional work examination will be evaluated by the teaching Faculty and it will be of 50% weight. The remaining 50% will be the final examination, conducted by University.

In the practical courses, 80% will be internal and 20% final examination.

To pass a particular course, a student must obtain a minimum of D grade in sessional work (average of internal assessments) and the final examination separately.

4. Attendance Requirement

The students must attend every lecture, tutorial, seminar and practical classes. However, to accommodate for sickness and other contingencies, the attendance

requirement shall be a minimum of 80% of the classes in any particular subject, otherwise she/he shall not be allowed to take the final examination in that subject. If a student is continuously absent in the class for more than four weeks without notifying the authorities, his/her name will be removed from the school roll.

5. Course Registration

The academic record of a student shall be maintained in terms of the courses for which s/he register in any semester, and the grades s/he obtain in those course. Registration for course is done at the beginning of each semester. Since registration is a very important procedural part of the credit system, it is absolutely essential that all students present themselves at the school. In case of illness or any exceptional circumstance during the registration period, the student must inform the University authority. Registration absentia may be allowed only in rare case, at the discretion of the authorized person. However, the students nominee cannot register for course and will only be allowed to complete other formalities.

Generally in a particular semester or year only those courses would be offered for registration which are mentioned in the syllabus, however their sequence may be interchanged if necessary.

6. Repeating a Course

Since passing of all course individually is a degree requirement, the student must retake the falling core course when offered and must successfully complete the course. Retaking a course in which a student has earned a D grade is optional. Student can retake a course when one receives GPA less then 2.0. The grade earned on the retake will be substituted for the grade earned previously

7. Transfer of Credit Hours

A maximum up to 25% of the total credit hours of course complete in an equivalent program of a recognized institution may be transferred / waived for credit on the recommendation of the head of the faculty. For transfer of credit, a student must have received a grade of B or better in respective course. Courses taken earlier than five years from the time of transfer may not be accepted for transfer of credit. However, a student transferring from one program to another program of Pokhara University may receive a

credit transfer of all the compatible courses completed with at least grade C.

The concerned Subject Committee of the University will make an evaluation of the applicant for transfer of credit. The awarding of transferred credit will be based on the applicant's score in the University, which s/he has attended previously.

8. Final Examination

University conducts final examination at the end of each semester. The procedure of final examination conduction will be as per the examination rules of the University.

9. Unsatisfactory Results

Students may apply for retotalling or rechecking of their grades as per University rule, upon payment of prescribed fee.

C. GRADING SYSTEM

The grades (marks) awarded to student in a course is based on his/ her consolidated performance in sessional and final examinations. The letter grade in any particular subject is an indication of a student's relative performance in that course. The pattern of grading will be as follows:

Letter	Grade	Grade point description
A	4.0	Excellent
A-	3.7	
B+	3.3	
B	3.0	Good
B-	2.7	
C+	2.3	
C	2.0	Satisfactory
C-	1.7	
D+	1.3	
D	1.0	Minium requirement
F	0	Failing

In unusual circumstances, the student may be awarded an incomplete grade of "I". If all the requirements are not complete within the following semester, the grade of "I" will be automatically converted to an "F". A student receiving an "I" grade does not need to register for that subject in the following semester to complete the required works.

The performance of a student in a semester will be evaluated in terms of the semester grade point average (SGPA). The student's final grade will be calculated on cumulative grade point average (CGPA).

SGPA = Total honor points earned in a semester/
total number of credits registered in a semester.
CGPA = Total honor points earned / total number
of credits completed.

D. DIVISION EQUIVALENCE

In Pokhara University, CGPA 2.5 or more and 3.0 or more considered as Second and First divisions, respectively.

E. DISMISSAL FROM THE PROGRAM

A student is normally expected to maintain a CGPA of 2.0, A student failing the maintain a satisfactory academic standard shall be dismissed from the program. In case a student gets less than 2.0 SGPA then in marginal cases only the Dean or the faculty can allow the student to continue his/her studies on the recommendation of program director or the subject committee.

F. AWARD OF DEGREE

On completion of all requirements with CGPA of 2.0 or better, the student will be awarded a degree of Bachelor of Public Health (BPH).

G. DEGREE WITH DISTINCTION

To obtain a degree with distinction, a student must obtained CGPA 3.6 or better.

H. DEAN'S LIST

The Dean's list recognizes outstanding performances of academic excellence by students. To qualify, a student must obtain a CGPA of 3.7 or better.

Note: The provisions of this document are not be regarded as a binding contract between the University and the students. The University reserves the right to change any provisions or requirements contained in this document at any time, without pre-notification, within the students term of residence

CURRICULUM STRUCTURE

FIRST YEAR

FIRST SEMESTER

Code	Description	Credit hours	Pre-requisite course	Core course
IPH 101.2	Introduction to Public Health	2		
APL 102.3	Anatomy and Physiology	3		
PPB 103.3	Pharmacology, Pharmacy and Biochemistry	3		
MLI 104.3	Microbiology and Immunology	3		
ENG 1053	Technical English	3		
BCA 106.3	Bio-Statistics and Computer Application –I	3		
LAB 1.1	Anatomy and Physiology Lab	1		
LAB 2.1	Pharmacology, Pharmacy and Biochemistry	1		
LAB 3.1	Lab	1		
TPP 1.1	Microbiology and Immunology Lab	1		
TPP 2.1	Technical English	1		
	Bio-Statistics and Computer Application –I			
	Total	22		

SECOND SEMESTER

Code	Description	Credit hours	Pre-requisite course	Core course

PFA 107.3	Pathology and First Aid	3		
TEL 108.3	Toxicology and Entomology	3		
BCA 109.3	Bio-Statistics and Computer Application -II	3		
BEP 110.3	Basic Epidemiology-I	3		
PBH 111.3	Public Health	3		
LAB 4.1	Pathology and First Aid Lab	1		
LAB 5.1	Toxicology and Entomology Lab	1		
LAB 3.1	Basic Epidemiology-I	1		
TPP 4.1	Public Health	1		
	Total	19		

SECOND YEAR

THIRD SEMESTER

Code	Description	Credit hours	Pre-requisite course	Core course
HSD 305.3	Health Systems Development II	3		
ISA 202.3	Introduction to Sociology and	3		
AEP 203.3	Anthropology	3		
HSD 204.3	Applied Epidemiology I	3		
HPE 205.3	Health System Development I	3		
	Health Promotion and Education			
TPP 5.1		1		
TPP 6.1	Health Systems Development II	1		
TPP 7.1	Introduction to Sociology and	1		
TPP 8.1	Anthropology	1		
TPP 9.1	Applied Epidemiology I	1		
	Health System Development I			
	Health Promotion and Education			
	Total	20		

FOURTH SEMESTER

Code	Description	Credit hours	Pre-requisite course	Core course
AEP 206.3	Applied Epidemiology II	3		
MSA 207.3	Medical Sociology and Anthropology	3		
EOH 208.3	Environmental and Occupational Health	3		
FDN 209.3	Food and Nutrition I	3		
HPE 210.3	Applied Health promotion and Education	3		
	Applied Epidemiology II			

TPP 10.1	Medical Sociology and Anthropology	1		
TPP 11.1	Environmental and Occupational Health	1		
TPP 12.1	Food and Nutrition I	1		
TPP 13.1	Applied Health promotion and Education	1		
TPP 14.1				
	Total	20		

**THIRD YEAR
FIFTH SEMESTER**

Code	Description	Credit hours	Pre-requisite course	Core course
EOH 301.3	Applied Environmental and Occupational	3		
FDN 302.3	Health I	3		
HRD 303.3	Food and Nutrition II	3		
PHC 304.3	Human Resource Development	3		
HSD 305.3	Primary health Care in Nepal	3		
	Health System Development II			
TPP 15.1		1		
TPP 16.1	Applied Environmental and Occupational	1		
TPP 17.1	Health I	1		
TPP 18.1	Food and Nutrition II	1		
TPP 19.1	Human Resource Development	1		
	Primary health Care in Nepal			
	Health System Development II			
	Total	20		

SIXTH SEMESTER

Code	Description	Credit hours	Pre-requisite course	Core course
REM 306.3	Research Methodology	3		
FAH. 307.3	Family Health	3		
ACH 308.3	Applied Child Health	3		
EOH 309.3	Applied Environmental and Occupational	3		
CMD 310.3	Health II	3		
	Community Diagnosis			
TPP 20.1	Research Methodology	1		
TPP 21.1	Applied Reproductive Health	1		
TPP 22.1	Applied Child Health	1		
TPP 23.1	Applied Environmental and Occupational			
	Health II			

	Total	20		
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**FOURTH YEAR
SEVENTH SEMESTER**

Code	Description	Credit hours	Pre-requisite course	Core course
HPP 401.3	Health Planning and Policy Development	3		
HEC 402.3	Health Economics	3		
RCA 403.3	Health System Research and Computer Software Application	3		
CFP 404.3	Comprehensive Field Practice	3		
HES 405.1	Health Seminar and Special Topics	1		
TPP 24.1	health planning and Policy Development	1		
TPP 25.1	Health Economics	1		
TPP 26.1	Research and Computer Software Application	1		
	Total	16		

EIGHTH SEMESTER

Code	Description	Credit hours	Pre-requisite course	Core course
SPT 405.6	Special Topics in Epidemiology (Any Two) Special Topics in Nutrition and Health Special Topics in Topics in Health System Special Topics in Occupational Health Special Topics in Environmental Health Special Topics in Child Health Special Topics in Health Economics Special Topics in Reproductive Health Special Topics in Primary Health Care Special Topics in National Health Priorities Areas	6		
HES 406.1	Special Topics in Health Technology/ Public Health	1		
DIS 407.6	Laboratory Health Seminar in Special Topics Dissertation	6		
	Total	13		

BPH
First Year
First Semester

IPH 101.2(Credit hours 2)

Introduction to Public Health
BPH, First Year, First Semester

Course Objectives:

To clarify the students on history, development and application of public health, at the completion of the course students will be competent to

- Describe the history, concept, definition, scope and limitation of public health
- Educate the student on major public health problems existing in Nepal

Course contents:

Unit-I: Public Health

16

- Definition of public health
- Historical development of public health from global to Nepalese context
- Concept of diseases, health and being healthy
- Scope of public health
- Preventive health and level of prevention
- Differentiate between public health, community health, community medicine and clinical medicine
- Concept of burden of disease and role of public in controlling disease

Unit-II: Public Health Problems in Nepal

16

- Vaccine preventable diseases
- Waterborne diseases
- Communicable diseases
- Non communicable diseases
- Injuries: domestic and industrial
- Reproductive tract infections
- Mental health and drug abuse
- Substance abuse

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. Coughlin,SS, Soskolne,CL, Goodman,KW. *Case studies in public health ethics*. Washington, DC: American Public Health Association, 1997.
4. Institute of Medicine. *The Future of the Public's Health in the 21st Century*. Washington, DC: National Academy Press, 2003.
5. American Public Health Association (APHA): www.apha.org
6. Program for International Training in Health (INTRAH): www.intrah.org
7. Public Health Foundation: www.phf.org
8. PubMed (Medline): <http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?db=PubMed>
9. UNAIDS: www.unaids.org
10. UNICEF: www.unicef.org
11. UN High Commission on Refugees: www.unhcr.ch/refworld/refworld.htm
12. United Nations Development Program (UNDP): www.undp.org
13. United Nations Population Fund (UNFPA): www.unfpa.org
14. World Bank: www.worldbank.org
15. World Federation for Medical Education (WFME): www.sund.ku.dk/wfme
16. World Health Organization (WHO): www.who.int

APL 102.3 (Credit hours 3)

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, Sagittal, 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.

D. Cardiovascular System

4 hours

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

F. Lymphatic System

2 hours

- Definition of lymph, Parts of Lymphatic System, Axillaries 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, paranasal sinuses, nasopharynx, trachea, bronchus and alveoli of the lungs.
- Surfactants of lungs.
- Gases 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 Livingstone, 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

PPB 103.3(Credit hours 3)

BPH, First Year, First Semester

Course Objectives

To impart the basic concept and knowledge on pharmacy, pharmacology and biochemistry. At the end of the course, students will be able to:

- Describe pharmacy and pharmacological related terminologies and the actions, reactions and the side effect of important drugs.
- Identify the various adverse effects of commonly used drugs and enumerate the name of emergency drugs, their procedure of administration and mode of actions.
- Understand the basic concepts and acquire the basic knowledge of biochemistry.

Course Contents:

Unit-I: Pharmacology and Pharmacy

1. Introduction

4 hours

- Principles of pharmacokinetics, pharmacodynamics and pharmacogenetics
- General concepts of anti-microbial therapy.
- Principles of Geriatric prescribing, Pediatric prescribing and Prescribing for Pregnant Woman
- Classification of drugs

2. Important Drugs and their actions

12 hours

- Life saving drugs: classification, mechanism of action, fate of drugs, side effects, indications and contraindication.
- Concept of essential drugs and its implementation in Nepal
- Drugs Used in TB, Malaria, Kala-azar, Leprosy, ARI, Diarrheal diseases, Common infections, HIV/AIDS, COPD, Diabetes, Hypertension.
- Antibiotics: Use, Misuse, and Resistance
- Use of antibiotics in food and animals and its public health implications.
- Drug Policy, Drug Act, Standard Treatment Guidelines

3. Date of manufacture and expiry date of drugs, handling and drug storage. Concepts of GMP, GLP and GCP

3 hours

4. Basic concept of rational drug use

2 hours

5. Vaccination and importance in maintaining cold chain.

3 hours

Unit-II: Biochemistry.

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|-------------------------------------------------------------------------------------------------------------------------------------|---------|
| • Introduction and application of Biochemistry in public health | 1 hour |
| • Basic concepts on Infectious & life style disease Biochemistry | |
| • Basic concept of acid, base and salts, acid-base indicator | 1 hour |
| • Water (Types, Properties and Ionization) including the concept of pH | 1 hour |
| • Buffer solution (Definition, Types of Buffers present in Body Fluid and their Significance) | 1 hour |
| • Carbohydrates (Definition, Classification, Physical and Chemical Properties) | 2 hours |
| • Glucose absorption and its homeostasis | 1 hour |
| • Proteins (Definition, Classification, Physical and Chemical Properties) | 2 hours |
| • Amino-acids (Definition, Classification and Biomedical Importance) | 2 hours |
| • Fatty acids (Definition, Nomenclature and Biomedical Importance) | 2 hours |
| • Definition, nomenclature and biomedical importance of lipid | 2 hours |
| • Important aspects of essential amino acids and fatty acids | 1 hour |
| • Biomedical importance of Cholesterol, Bile salts, Hormones and Lipoproteins | 1 hour |
| • Enzymes and co-enzymes (Definition, Classification and Biomedical Importance) | 1 hour |
| • Nucleic acids (DNA, RNA, Nucleotide, Nucleoside) | 2 hours |
| • Macro and micronutrients (Iron, Calcium, Iodine, Copper, Zinc, Phosphorus, Magnesium, Manganese, Molybdenum, Cobalt, Nickel etc.) | 2 hours |
| • - Daily requirements, source, biomedical importance | |
| • Vitamins (Fat and Water Soluble) | 2 hours |
| • - Daily requirements, source, biomedical importance | |

References:

Katzung BG. Basic and Clinical Pharmacology, 7th Edition. Lange, Medical Books. McGraw-Hill, New York, 1998
Satoskar RS., Bhandarkar SD. *Pharmacology and Therapeutics*. Popular Prakashan Limited: Bombay. Recent Edition.
Lenninger, AL. *Principles of Biochemistry*. CBS Publications.
Murray RK, Granner DK, Mayes PA, Rodwell VW. *Harpers Biochemistry*, 21st Edition,. Appleton and Lang: California, 1995
Stryer, L. *Biochemistry*. 4th Edition.. W.H. Freeman and Company: San Francisco, 2000
National List of Essential Drugs, DDA, 1987.WHO list of Essential drugs, WHO, 1977
Standard Treatment Guidelines published by DDA, 1998.
WHO Drug Formulary, 2002.
Documents related to drug act and national drug policy published by DDA.
Department of Drug Administration: www.dda.gov.np
World Health Organization: www.who.int

MLI 104.3 (Credit hours 3)

Microbiology and Immunology BPH, First Year, First Semester

Course Objectives:

To provide the basic concepts in microbiology, (bacteriology, virology, parasitology, mycology), immunology and disease process. Upon the successful completion of the course, students will be able to:

- Describe the concepts of microbial diseases (fungal, parasitic, bacterial, viral and immunological diseases) and the life cycle of common intestinal and blood parasites and able to conduct disease, prevention and control mechanism of microbial diseases.
- Explain the morphology, physiology and growth requirement of bacteria and describe concepts of normal, opportunistic- and pathogenic microorganisms.
- Understand the mechanism of infection, development of immunity and diagnosis
- Describe sterilization methods and their uses.
- Identify the common and important diseases in communities, and describe the selection, collection and transportation, storage and processing of specimens.
- Understand the basic concepts and techniques in immunology.

Course Contents:

Unit-I: Microbiology

1. Introduction to microbiology

4 hours

- Definition scope and history of microbiology
- Classification of microbial diseases.
- Introduction to community acquired microbial infection
- Host parasitic interaction

2. Bacteriology

10 hours

- Classification of bacteria.
- Normal bacterial flora on/ in the human body.
- Opportunistic and pathogenic organisms.
- Bacterial physiology and growth factors.
- Mechanism of infection, resistance to infection and immunity
- Spread of diseases, pandemic, endemic, epidemics and nosocomial infection.
- Physical sterilization, chemical disinfections and irradiation.
- Selection, collection and transportation, storage and processing of specimens for identification of common diseases of public health concern

3. Virology

8 hours

- Introduction and scope of virology.
- Classification and replication of virus.
- Introduction to viral diseases of public health concern (Influenza, Measles, RSV, Arboviruses, Rotavirus, Hepadnaviruses, Coronaviruses, Picornavirus, Rhabdovirus, Adenovirus, Orthomyxo, Paramyxo etc.)
- Collection preservation, transport, storage and processing of specimen for laboratory study.
- Methods of prevention and control of viral diseases.

4 Parasitology

16 hours

- Classification of parasites of public health importance
- Introduction to parasitic diseases associated with poor hygienic conditions
- Blood and tissue parasites (Malaria parasite, Kala-azar, Microfilaria), their life cycle and mode of infection
- Intestinal parasites
- Selection, collection, transportation of sample, processing of samples.
- Treatment, prevention and control of common parasitic diseases.

Unit-II: Immunology

10 hours

- Introduction to immunology
- Types of Immunity
- Defense mechanism of body.

- Antigen, antibody and antigen antibody reaction
- Hypersensitivity reaction.
- Basic concept of immunology in diagnosis of diseases.

References:

1. Pelczar MJ, Chan ECS and Krieg NR. *Microbiology*, 5th ed.. Tata McGraw Hill Book Company: New Delhi, 1986
2. Cheesebrough M. *Medical Laboratory Manual for Tropical Countries*. Vol I& Vol II. ELBS,
3. 1996
4. Fuerst R. *Microbiology in Health and Diseases*. W.B. Saunder & Co, 1995.
5. Mackoe and Mac Cartney Cathey MC. *Practical Medical Microbiology*. Churchill Livingston, 1994
6. Ivan Riot. *Essential Immunology*, ELBS- 9th Edition, 1999.
7. Topley & Wilsons – Bacteriology, Virology & Mycology
8. Bailey & Scott's – Diagnostic Microbiology

ENG 105.3 (Credit hours 3)

Technical English **BPH, First Year, First Semester**

Course Objectives:

To impart the basic concepts in communication skills in technical English. Upon successful completion of the course students will be able to:

- Use tense, time and aspect
- Identify sentence (clause) and its types and transformation of sentences
- Communicate in different technical topics
- Develop reading skills, note making and summarizing from different passages
- Prepare short memoranda, write business letters, job application, seminar papers, and proposal writing

Course Contents:

Unit I: Review of Written English

8 hours

Sentence structure (identification of sentence or its types and transformation of sentences) and clauses.

Unit II: Oral Communication, Note Taking and Summarizing

15 hours

Preposition & noun phrases (noun, adjective and adverbs) and their use, verbal phrases, Types of English (variety levels of English), Technical talk (Environmental impact, Impact of Computer in Modern Society, Impact of Satellite Communication, Urban Development, Drug Use Problems, Role of Public Health Professionals in the Community, Disease outbreak etc.)

Unit III: Technical Writing Skill

10 hours

Preparation of short memoranda (Importance- formats), Health messages, Business letters (Importance-purposes), paragraph writing (descriptive/narrative, argumentative, compare and contrast etc.), Job application (bio-data), Description writing (Process, Mechanism, place etc.), Seminar papers (Conduction of seminar, Preparation of circular, presenting seminar paper), Reporting, proposal writing (Importance- type, formats), Preparation of reports (Importance-types, formats).

Unit IV: Reading skill

15 hours

Comprehension questions and exercises (from prescribed passages-Discovery of Antibiotics, Communicable Diseases, People and Environment, Healthy Life Styles, Alma Ata Conference on PHC, Foundations of Public Health etc.), Outlining or note taking, precise writing.

References:

1. Eisenberg A. *Effective Technical Communication*., McGraw-Hill Inc, 1982
2. Houpp and Pearsall TE. *Reporting Technical Information*., Allyn and Bacon: Boston.
3. Narayanaswami VR. *Strengthen Your Writing*. Orient Longman, Madras.
4. Tickoo C. and Sasikumar J. *Writing with a Purpose*. Oxford University Press: Bombay.
5. A Handbook of Pronunciation of English Words (with 90 minutes audio cassette).
6. Communication Skill in English.
7. Oxford Advanced Learners' Dictionary of Current English.

BCA 106.3 (Credit hours 3)

Bio-statistics and Computer Applications I **BPH, First Year, First Semester**

Course Objectives:

To develop the student's skills on basic statistics used in public health research and to develop the student's skills in handling the statistical software in computer. 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.
- Handle the statistical software in computer.
- Plan out the data analysis process and prepare data entry format in appropriate statistical software package

Course Contents:

Unit I: Descriptive Statistics

Total Theoretical

1. Introduction

6 hours

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

2. Measures in Descriptive Statistics

14 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

8 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

6 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)

Unit II: Computer Applications

14 hours

- Overview of various statistical software programs available for data analysis process
- Introduction to Computer, and use of Epi-Info 2000 and SPSS in computer
- Making Data Entry Format and Creating New Variables in Computer
- Simple Descriptive Statistical Data Analysis Process in Computers
- Making Presentation Slides in Computer (Power Point)

References:

1. Gurung CK. *A Handbook of Bio-statistics*; 1st Edition, Makalu Books, Kathmandu, 2005.
2. Rosner B. *Study Guide: Fundamentals of Bio-statistics*, 5th Edition, Duxbury Thomson Learning, 2000.
3. Daniel WW. *Bio-statistics: A Foundation for Analysis in the Health Sciences*, 7th Edition, John Wiley & Sons, Inc. 1999.
4. Anthony D. *Understanding Advanced Statistics*, Churchill Livingstone, Harcourt Brace and Company Limited, 1999.
5. Essex-Sorlie D. *Medical Bio-statistics & Epidemiology*, 1st Edition, Appleton & Lange, Morwalk, Connecticut, USA, 1995.
6. 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.

LAB 1.1 (Credit Hour 1)

Anatomy and Physiology
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

LAB 2.1 (Credit Hour 1)

Pharmacology, Pharmacy and Biochemistry
BPH, First Year, First Semester

Course Objective

To impart laboratory skills in basic pharmacy extemporaneous preparations, procurement, labeling and storage of pharmaceuticals as well as basic biochemical tests and procedure.

Course Contents:

1. Basic instrumentation in pharmacology and biochemistry.
2. Basic extemporaneous preparation of pharmaceutical products
3. Demonstration of practical aspects on handling of prescription
4. Pharmaceutical procurement process for health care facilities
5. Pharmaceutical product labeling, transportation and storage.
6. Measurement of pH (solutions, buffers etc.)
7. Preparation of different types of solutions i.e. normal solution, molar solution, molal solution and percentage solution
8. Estimation of glucose, protein albumin etc in body fluids.
9. Measurement of micronutrients and electrolytes

LAB 3.1 (Credit hour 1)

Microbiology, Virology and Immunology
BPH, First Year, First Semester

Course Objective:

To familiarize with the practical laboratory skills in identifying and diagnosing the microbial fungal diseases.

Course Contents:

1. Selection, collection, transportation, storage and processing of samples for laboratory diagnosis of microbial diseases
2. Basic culture media and culture techniques
3. Culture and sensitivity tests and antimicrobial activity
4. Performance of Gram stain, AFB stain, Romanowsky staining and identification of bacteria
5. Preparation of slides and identification of ova, cyst, trophozoites from stool specimen
6. Collection, preparation of slides, staining and identification of blood and tissue parasites
7. Use of autoclave, hot air oven and chemicals disinfection
8. Processing of specimens for diagnosis of viral diseases
9. Handling and routine examination of urine and other body fluids

**BPH
First Year
Second Semester**

PFA 107.3 (Credit hours 3)

**Pathology and First Aid
BPH, First Year, Second Semester**

General 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: Pathology

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

2 hours

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

- Basic Concepts of Fractures, Arthritis, Osteomyelitis, 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. Neurosensory 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.

TEL 108.3 (Credit hour 3)

Toxicology and Entomology BPH, First Year, Second Semester

Course Objectives:

To provide basic concept and knowledge on toxicology and entomology. Upon the successful completion of the course, students will be able to:

- Understand the basic concepts and acquire the basic knowledge of toxicology and its implication in public health.
- Understand diversity of toxicology and its application in understanding and controlling problems related to toxic substance in industry, agriculture and medicine.
- Describe the role of arthropods and rodent in public health, the characteristics of different arthropods and rodents of medical importance and diseases transmitted by them, different control measures of arthropods and rodents.
- Describe the usability, problem of resistance and health hazards of insecticides and rodenticides.

Course Contents

Unit-I: Toxicology.

1. Introduction to Toxicology

2 hours

- Definition, scope and application of toxicology
- Terminologies used in toxicology

2. Basic Principles of Toxicity

2 hours

Toxic and toxicity, Toxicity value, Acute and Chronic toxicity, Poison, Toxicity categories- EPA, WHO, Personal protection equipments, Causes of poisoning, Poison Prevention, Case studies, Factors that influence toxicity.

3. Diversity of Toxicology

20 hours

- 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 OP, OC, pyrethrins, phosphides, paracetamol, benzodiazepines, barbiturates, opiates, TCA, iron, Datura, snake bites, bee/wasp/hornet sting, scorpion bites.

Unit-II: Entomology

1. Introduction

2 hours

- Introduction to medically important arthropods and rodents.
- General outline, classification of arthropods and rodents (with special reference to medically important groups).

2. Habit, habitat, morphology and control measures of:

14 hours

- Arachnids: Scorpions, spiders, ticks, mites.
- Non-dipterous insect: Lice, fleas, bugs, and cockroach.
- Dipterous insects: Myasis Producing flies, Phlebotomine-Sand flies, Simulium-Black flies, Mosquito- Culicine, Anopheline, Aedes

3. Habit, habitat, morphology and control measure of rodents

3 hours

4. Diseases and health hazards

5 hours

- Diseases and health hazards associated with arthropods and rodents.
- Different methods of controlling arthropods and rodents
- Integrated Pest Management (IPM)
- Insecticides, rodenticides and their usability.
- Insecticides –problem of resistance.

References:

1. Amdur MO, Doull J, Klaassen CD (ed). *Casarett and Doull's Toxicology: The Basic Science of Poisons*, 5th ed. McGraw Hill: New York; 1996.
2. Olson KR, Anderson IB, Clark RF et al. (ed). *Poisoning and Drug Overdose*, 3rd ed. Appleton & Lange: Stamford, Connecticut, 1999.
3. Wall Chart on the Management of Commonly Encountered Poisons in Nepal, 2000
4. Handbook on management of Pesticide Poisoning published by Plant Protection Division, Ministry of Agriculture.

BSC 109.3 (Credit hours 3)

Bio-statistics and Computer Applications - II **BPH, First Year, Second 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

1. Estimation

8 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

2. Statistical Measures in Analytic and Experimental Study Design

22 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, Bartlett's 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

Correlation: Friedman Test 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

3. Interpretation of various statistical outputs

4 hours

Unit II: Computer Applications

14 hours

- Data Management in Computer
- Parametric tests performed in Computer Non-parametric tests performed in Computer
- Use of multimedia during slide presentation in Computer

References:

1. Gurung CK. *A handbook of Bio-statistics*; 1st Edition, Makalu Books, Kathmandu, 2005.
2. Rosner B. *Study Guide: Fundamentals of Bio-statistics*, 5th Edition, Duxbury Thomson Learning, 2000.
3. Daniel WW. *Bio-statistics: A Foundation for Analysis in the Health Sciences*, 7th Edition, John Wiley & Sons, Inc. 1999.
4. Anthony D. *Understanding Advanced Statistics*, Churchill Livingstone, Harcourt Brace and Company Limited, 1999.

5. Essex-Sorlie D. *Medical Bio-statistics & Epidemiology*, 1st Edition, Appleton & Lange, Morwalk, Connecticut, USA, 1995.
6. 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.

BEP 110.3 (Credit hours 3)

Basic Epidemiology I BPH, First 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
- Epidemiology 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

PBH 111.3 (Credit hours 3)

Public Health BPH, First Year, Second Semester

General Objective

To explore the public health approaches, emergence and resurgent issues relating to public health , primary health care and acquire knowledge as well as skills to address the issues. At the end of the course, students shall be able to:

- Explore the public health approaches
- Demonstrate holistic understanding of health and disease.
- Analyses the development of primary health care (PHC) in global and Nepalese context
- Understand the concept and application of community medicine and public health

Course Contents:

Unit-I: Public Health Approaches

12 hours

1. Concept of Health and Disease

- Preventive Health and Levels of Prevention
 - ❑ Application of public health from medical model.
 - ❑ Application of public health from spiritual model.
 - ❑ Application of public health from holistic model
- Distinction between public health, community health, community medicine and social medicine.

2. Preventive Health

- Concept
- Level and scope of preventive health
- Practices of prevention in different level

3. Health Promotion

- Concept including Ottawa Charter of health promotion.
- Scope of health promotion
- Priorities for health promotion in 21st century in reference to Jakarta Declaration

Unit-II: Legal aspects in Public Health

12 hours

- Environmental Health Laws
- Occupational Health Laws
- Consumer Rights; Patients Rights;
- Health policies
- Health plans
- Alma Ata and International declaration
 - Human right
 - Women

- Children
- Ageing
- Disable
- Ethics
- International Conference on Population and Development (ICPD, Cairo)
- Beijing conference
- HABITAT 2nd (Istanbul 1996)
- Millennium Development Goals (MDGs)

Unit-III: Introduction to Primary Health Care **10 hours**

- Definition and philosophy of primary health care
- Principles and strategies of primary health care
- Primary health care and basic health care
- Principles and strategies to the components of primary health care

Unit-IV: Components of primary Health Care **10 hours**

- National health policies and strategies on primary health care components
- Role of community people and health personnel in primary health care

Unit-V: Community Medicine and Public Health **4 hours**

- Meaning, scope and application of community medicine and public health
- Changing approaches in community medicine and public health

References:

1. Werner D., Sanders D. Questioning the solution: the politics of primary health care and child survival. *Health Rights*, 1997.
2. Dixit H. *The Quest for Health*. Educational Enterprises, Kathmandu, 1999.
3. 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*. 22 (3), 290-306, 1995.
4. Friis, R.H. & Sellers, T.A. (1999). *Epidemiology for public health practice*. 2nd edition Gaithersburg, MD: Aspen Publication, 1999.
5. Institute of Medicine. *The Future of the Public's Health in the 21st Century*. Washington, DC: National Academy Press, 2003.
6. Lasker, R.D. *Medicine and Public Health: the power of collaboration*. New York, NY: The New York Academy of Medicine, 1997.
7. Park J.E. and Park K. *Text book of social and preventive medicine*, 15th edition, 2002.
8. Schwab, M., & Syme, S.L. On Paradigms, Community Participation, and the Future of Public Health. *American Journal of Public Health*, 87 (12). 2049-2051, 1997.
9. World Health Organization. *Alma Ata: primary health care*, WHO: Geneva, 1979

LAB 4.1 (Credit hour 1)

Pathology and First Aid Lab BPH, First Year, Second Semester

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, Immuno 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.

LAB 5.1 (Credit hour 1)

Toxicology and Entomology Lab BPH, First Year, Second Semester

Course Objectives:

To provide knowledge on toxicologically significant case studies and basic laboratory skills in entomology

Course Contents:

1. Case studies in clinical toxicology
2. Report on clinically important toxic substances
3. Visit to forensic toxicology laboratories
4. Identify medically important arthropods and rodents
5. Classify up to the species level of mosquitoes, flies, bugs, arachnids (scorpions, spiders, ticks, and mites) and rodents of medical importance
6. Illustrate the different stages of the life cycle of medically important insects
7. Prepare the temporary and permanent slides of medically important insects (different stages of the life cycle) and arachnids to study their morphology

BPH

**Second Year
Third Semester**

BEP 201.3 (Credit hours 3)

**Basic Epidemiology II
BPH, Second Year, Third Semester**

Course Objectives:

To orient the students in epidemiological study design, calculations and applied epidemiology

Specific 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

30 hours

1. Frequency Measures Used in Epidemiology

- Definition concept and comparison of proportion, rate and ratio
- 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
- 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
- Frequency measures used in atality: Crude birth rate; crude fertility rate; crude rate of natural increase

2. Study Design

- Types of study: Descriptive, Analytical and Experimental
- Ecological study and ecological fallacy
- Case Control study
 - Theoretical foundation
 - Nested case control studies
 - Selection of cases and control
 - Calculation and interpretation of odds ratio in case control study
 - Comparability of odds ratio and relative risk
 - Matching and overmatching
 - Advantages and disadvantages of case control study
- Cohort Study
 - Theoretical foundation

- Closed cohort and dynamic population study
 - Prospective and retrospective cohort study
 - Time related aspects of exposure and follow up period
 - Selection of comparison group in cohort study
 - Calculation and interpretation of risk ratio in cohort study
 - Advantages and disadvantages of cohort study
 - **Interventional Study**
 - Types of interventional study
 - Trials: clinical trials, field trials, community intervention and cluster randomized trials
 - Masking in interventional study
 - Advantages and disadvantages of interventional study
 - Validity and reliability and their types
 - Threats to validity in epidemiological study
 - Chance
 - Bias and its types
 - Concept of confounding and the methods of prevention and controlling it: randomization, restriction and stratification
 - Generalizability
- 3. Causation and Causal Inference**
- Spurious and causal association
 - A general model of causation: Concept of necessary and sufficient cause, Rothman's causal pie-conceptual scheme for a causes of a hypothetical disease strength of effect, Interaction among causes, Induction period, generality of the model, Measurement of strength of association

Unit-II: Special Issues in Epidemiology

8 hours

- Surveillance:
 - Objectives of surveillance
 - Elements of a surveillance system
 - Approaches to surveillance
 - Attributes of surveillance
- Screening:
 - Natural history and characteristics of diseases
 - Effects of screening
 - Characteristics of screening: Measure of test performance
 - Lead time and detectable pre clinical phase: predictive value
 - Advantages and disadvantages of screening

Unit-III: Applied Epidemiology

10 hours

- Social Epidemiology
- Environmental Epidemiology
- Nutritional Epidemiology
- Reproductive 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

Journals:

1. American Journal of Epidemiology
2. European Journal of Epidemiology

Introduction to Sociology and 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, Pastoral, Agrarian, 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.

Applied Epidemiology-1
BPH, Second Year, Third Semester

Course Objectives:

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

- Explain the concept and application of social epidemiology.
- Describe the applied epidemiology of infectious diseases prevalent in Nepal.

Unit-I: Social Epidemiology

10 hours

- Meaning, scope and application of Social Epidemiology
- Evolution of epidemiology with reference to social epidemiology
- Study designs in social epidemiology
- Application of social epidemiology in public health
- Role of social epidemiology in designing disease control plan and strategies
- Limitation of social epidemiology

Unit-II: Communicable Diseases Epidemiology

32 hours

Viral Infections

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

Bacterial Infections

Streptococcal infections, Meningococcal infection, Staphylococcal infections, Diphtheria, Whooping cough, Typhoid, Shigella dysentery and other diarrhoeal diseases of bacterial etiology, Cholera, Plague, Anthrax, Listeriosis, Tetanus, Gas gangrene, Tuberculosis, Leprosy, STDs of bacterial etiology, Yersiniosis, Cryptosporidiosis, Campylobacter infection, Food poisoning .

Fungal Infections

Candidiasis

Helminth Infestations

Filaria, infestation by Hookworms, Roundworm, Strongyloides and other Nematodes, Taenia saginata and Solium hymenolepis nana and Hydatid cyst.

Protozoal Infections

Malaria, Leishmaniasis, Trichomoniasis, Amoebiasis, Giardiasis.

Zoonotic diseases

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

Other

- Trachoma

Unit-III: Health Services for Infectious Diseases in Nepal

6

- Screening programs.
- Surveillance Programs

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. National Health and Medical Research Council. *The Australian immunisation handbook*. 7th ed. Canberra: AGPS, 2000.
8. Tyrrell DA, Cohen S, Schlarb JE. Signs and symptoms in common colds. *Epidemiol Infect* 1993; 111: 143–56.
9. Vazquez M, LaRussa PE, Gershon A, et al. The effectiveness of the varicella vaccine in clinical practice. *N Engl J Med* 2001; 344: 955-960.
10. 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.

Health Systems Development I
BPH, Second Year, Third Semester

Course Objectives:

To develop knowledge on the modern concepts and principles of management in general and public health management in particular. Upon successful completion of the 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

36 hours

- Concept, principles, scope and application of public health management and administration.
- Functions of public health management and administration.

1. Planning of Health Services

- Introduction of health services
- Strategy formulation
- Elements of planning
- Different method of planning
- Setting objectives
- Management by objectives
- System approach in planning
- Organization of Health Services
- Importance of organization structures
- Organization theory

2. Staffing Aspects of the Organizing Functions

- Staffing pattern.
- Role and responsibilities
- Recruitment and placement
- Career planning opportunities -training, promotion
- Performances appraisal
- Staff grievances and negotiations.

3. Directing

- Introduction
- Human factor.
- Keys to successful directing
- Delegation as a means of directing.
- Motivational aspects.
- Leadership.
- Communication
- Monitoring, supervision and evaluation.
- Controlling function in health services administration

4. Co-ordination of Health Services

- Introduction
- Types of co-ordination
- Conceptual co-ordination
- Functional co-ordination
- Organizational co-ordination

5. Budget

- Introduction, process of budgeting

- Fiscal planning (budgeting, accounting and auditing)

6. Project Formulation and Management

- Need assessment
- Project proposal writing.
- Identifications of funding sources.
- Project management
- Monitoring program evaluation review technique/critical path method

7. Reporting

- Importance
- Techniques of report writing format and content

Unit-II: Health and Health Service Management Information System (HMIS)

12

- Concept, definition and application of HMIS
- Objectives of HMIS: 2 way flow of information: Reporting from health facilities, district, region to central level
- Maintenance and use of health information available at the district
- Introduction of recording and reporting tools
- Indicators of HMIS
- Use of information for planning and re-planning of health services programs.
- Types and techniques of periodic report writing.
- HMIS as a monitoring tool, systems in HMIS
- Strengths and weaknesses of current data collection systems

References:

1. Dixit, H. *Quest for Health*. Educational Enterprises, Kathmandu, 1999.
2. Griffing CC. *Health Sector Financing in Asia*, The World Bank Report No. IDP68, August.
3. HMG, MOH. *Second Long Term Health Plan 1997-2017*. 1998.
4. HMG, DHS. *Annual Report*. 2003.
5. Lee K. *The Economics of Health in Developing Countries*, Oxford University Press. 1983.
6. Mills A., Gilson L. *Health Economics for developing countries: A survival kit*, EPC publication number 17, summer 1988. (Reprinted August 1992).
7. Tripathy PC and Reddy PN. *Principles of Management*.
8. Young DW. *Financial Control in Health Care: A managerial perspective*. An Aspen publication, Aspen publisher. Inc, Rockville, Maryland, USA, 1984.

Health Promotion and Education

BPH, Second Year, Third Semester

Course Objectives:

To appraise the students on the basic concepts of health promotion 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

10 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
 - Theory of reasoned action (Sibbels)
 - Health Belief Model (Rosenstock etc)
 - Cognitive Dissonance Theory (Festinger)
 - Force field analysis (Kurt Lewin)
 - Motivation theories (Maslow, Hertzberg)
 - Behaviour change communication (BCC)
 - Ottawa Health Charter and Jakarta declaration of health promotion.
 - Role of international union for health promotion and education (IUHP)

Unit II: Health Promotion and Education

15 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:
 - Change process: meaning importance and kinds
 - Change modules: adoption process; unfreezing, moving and re-freezing
 - Change strategies: homophile, empathy, reciprocal

Unit-III: Health Promotion and Education: Methods and Media

23 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):
 - interview, counseling
 - Group discussion, demonstration, role play, panel discussion, fish-bowl session, buzz session, mini-lecture, field trip, workshop and seminars
 - 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.

References

1. Bedworth D., Bedworth A. *Health Education: A Process of Human Effectiveness*. Harper and Row NY, 1978.
2. Guilbert JJ. *Educational Hand Book for Health Professional*. Geneva: WHO, 1977.
3. Skinner BF. *About Behaviourism*, New York, Alper 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. Rinehart and Winston inc. 1960.
7. Armin MF Goidschmidt BH. *Communication Between Doctor and Patients in Thailand*. Saarbrücken 1972.
8. Luft J. *Group Processes - An Introduction to Group Dynamics*. Joseph 2nd edition, 1970

Fourth Semester APE 206.3 (Credit hours 3)
Applied Epidemiology II
BPH, Second Year, Fourth Semester

Course Objectives:

To explore the concept on infectious disease epidemiology and design the study for controlling the diseases. At the completion of the course students shall be able to:

- Understand the students on non-communicable disease epidemiology.
- Facilitate the student on epidemiological aspects of conflict and disaster management
- Train the students on field epidemiology

Unit-I: Non-communicable Diseases Epidemiology 12 hours

- Growing nature of non-communicable diseases and their impact on the population
- Methods of analyzing information to determine risk factors
- Applied Epidemiology of Accidents, mental health, Suicide, COPD, CVD, Cancer, Drug Abuse, Diabetes Chemical and Food Poisoning, Snake bite.
- Deficiency Diseases: PCM/PEM, VADD, Rickets, Osteomalacia, Beriberi, and IDA, IDB and others.
- Identification of problems encountered in investigations with respect non- infectious diseases and health problems commonly prevalent in Nepal.

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

Unit-III: Field Epidemiology

10 hours

- Components of field epidemiology
- Guideline for epidemiological study
- Format for epidemiological study

References:

1. DOHS, Epidemiology and Disease Control Division. *Control of Communicable Disease Manual* 2003.
2. Chin J. Control of Communicable Disease Manual. *An Official Report of the American Public Health Association*, 2000.
3. DOHS, Epidemiology and Disease Control Division. *National Recommended Case Definitions and Surveillance Standards* 2003.
4. Frank AL, Taber LH, Wells CR, et al. Patterns of shedding myxoviruses and paramyxoviruses in children. *J Infect Dis* 1981;144: 433– 41.
5. 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
6. National Health and Medical Research Council. *The Australian Immunization Handbook*. 7th ed. Canberra: AGPS, 2000.

7. Tyrrell DA, Cohen S, Schlarb JE. Signs and symptoms in common colds. *Epidemiol Infect* 1993;111: 143–56.
8. Vazquez M, LaRussa PE, Gershon A, et al. The effectiveness of the varicella vaccine in clinical practice. *N Engl J Med* 2001; 344: 955-960.
9. 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.
10. www.cdc.gov
11. www.who.int

Journals:

1. American Journal of Epidemiology
2. European Journal of Epidemiology

MSA 207.3 (Credit hours 3)

Medical Sociology and Anthropology 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, Sanskritisation, 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: Model's 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.

Unit-II: Social Psychology

10

1. Introduction to Social Psychology

- Terminology: Terminology and concepts useful in studying health problem, body-mind relationship, Level of consciousness, Dynamic system of personality, Drivers and motives, Adjustment mechanism, Stress, crisis and disease
- Definition and significance of behavioral science
- Relationship between, sociology, psychology and anthropology in health.

2. Motivation

- Meaning and definitions of motivation.
- Maslow's concept of human motivation, including hierarchy of needs.
- Role of motivation in learning and health education.
- Motivation and adoption of innovation.
- Motivation towards utilizing modern health facilities.

3. Emotion

- Meaning, characteristics
- James Lange Theory, Cannon Bard Theory, Schachter-Singer theory of Emotions.
- States of Emotions: Positive emotion (Love, Laughter, Hope, Optimism, Self Confidence and Negative emotion (Anger, Fear, Sadness, Boredom, Guilt)

4. Frustration and Conflicts

- Meaning, Source and reactions of Frustration.
- Types of Conflict (Approach – Approach, Avoidance – Avoidance, Approach- Avoidance, Multiple Approach-Avoidance)

References:

1. Alford RR. *Health Care Politics*. Chicago: University of Chicago Press 1975.
2. Dixit H. *Quest for Health*. Educational Enterprises, Katmandu, 1999.
3. Foster GM., Anderson BG. *Medical Anthropology*. Alfred a. Knopf, New York, 1978.
4. Freeman E., Howard L.S., Reeder GL(ed). *Handbook of Medical Sociology*. 3rd Edition, Prentice Hall, Inc. Englewood Cliffs, New Jersey, 1979.
5. Van Der GS. Whyte SR. *The Context of Medicines in Developing Countries: Studies in Pharmaceutical Anthropology*, 1991. Het spinguis publishers, Amsterdam, The Netherlands.

EOH 208.3 (Credit hours 3)

Environmental Health and Occupational Health BPH, Second Year, Fourth 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: 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-III: 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-IV: 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

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 Inc 1988.
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*. WHO 1993.
7. WHO. *WHO commission on health and environment*. Report of the panel on food and agriculture. Geneva: WHO 1992.

8. WHO. *Climate Change and Human Health*, WHO/WMO/UNEP, 1996.
9. WHO. *Guideline for Drinking Water Quality: Health Criteria and other Supporting Information*, WHO 1996.
10. WHO. *Monitoring Ambient Air Quality for Health Impact Assessment*, WHO1999.
11. WHO. *Surface Water Drainage for Low-income Communities*, WHI/UNEP1991.
12. Whyte, A. *Guidelines for planning community participations in water supply and sanitation project*. WHO1986.

FDN 209.3 (Credit hours 3)

Food and Nutrition-I

BPH, Second Year, Fourth Semester

Course Objectives:

To develop knowledge on nutrition, nutrient requirements of different age groups, skills in assessing the nutritional status and interference to improve malnutrition. Upon successful completion of the course students shall be able to:

- Introduce the concepts of food and nutrition and the processes of food utilization for health growth & development
- Understand the needs of major nutrients at population with individual level their daily requirements
- Assess nutritional status of individuals and communities
- Explore context appropriate nutritional interventions

Course Contents:

Unit-I: Introduction to Basic Food Science and Nutrition

8 hours

- Nutrition as public health science
- Concept of food and nutrition
- Classification, composition and nutritive value of foods
- Conceptual framework of (under-nutrition and over nutrition) malnutrition
- Macronutrients and their functions
- Micronutrients and their functions
- Balanced diet/food pyramid and non nutrient nutrition promoters

Unit-II: Metabolism of Macronutrients

12 hours

- Basic concept of human physiology- Digestion, assimilation and degradation at Cells, tissues-organ, system and the body
- Digestion, metabolism (catabolism and anabolism) of Carbohydrate, Protein, Fat, Vitamin, Mineral.

Unit-III: Nutritional Requirements of Different Age Group

12 hours

- Nutrition needs of infant and young child, pregnant, lactating, adolescents and aged
- Counseling and management of malnutrition in children – Nutritional Rehabilitation
- Foods beliefs, taboos and changing trends of food habits
- Lifecycle approach, in nutrition promotion with focus on intergenerational effects of malnutrition

Unit-IV: Assessment of Nutritional Status and Major Indicators

16 hours

- Diet Surveys
- Biochemical assessment
- Anthropometrics measurement
- Clinical Assessment
- Indirect Parameters of Nutritional status
- Nutrition Indicators and HMIS

References

1. Bamji M.S., Rao NP, Reddy V. *Textbook of Human Nutrition*, Oxford & IBH Publishing Co. Pvt. Ltd.
2. Gopalan BV, Sastri R and S.C. Balasubramaniam. *Nutritive Value of Indian Foods*. Hyderabad, India. NIN and Indian Medical Research: 1994
3. Felicity SK and Aurgess A. *Nutrition for Developing Countries*, Second edition, Oxford University Press: 1992
4. His Majesties Government of Nepal, Department of Health Services. Annual Report,

5. 2003/2004
6. MoH/MI/New ERA. Nepal Micronutrient Status Survey, Kathmandu: 1998.
7. Asian Development Bank, UNICEF. *Investing in Child Nutrition in Asia: Nutrition and Development Series No. 1* edited by Joseph Hunt and M.G. Quibria,
8. MoH/New ERA/ORC Macro. *Nepal Demographic Health Survey*. 2001, Kathmandu: 2002
10. Swaminathan M. *Advanced textbooks on foods and nutrition*, Volume II & I. India: Bappco 1990.

HPE 210.3 (Credit hours 3)

Applied Health Promotion and Education BPH, Second Year, Fourth Semester

Course Objectives:

To develop the practical knowledge on the development and establishment of health education and promotion interventions in national health system. At the end of the course students shall be able to:

- Critically appraise health education, promotion and policy, strategy and activities in Nepal
- Carry out school health promoting activities including life skill education
- Plan health promotion and education program.
- Implement, monitor and evaluate health education programs in Nepal.

Unit-I: Health Promotion and Education in Nepal

8 hours

- Policy strategy programs regarding health promotion and education in Nepal
- Institutions responsible for delivering the health promotion and education in Nepal
- Review of the health promotion and education activities at different institutions.
- NHEICC and its programs, policy and activities.

Unit-II: Health Promoting Institutions

10 hours

- Meaning, importance, areas, steps and life skill education
- Health promoting work place.

Unit-III: Planning of Health Promotion and Education Program

15 hours

- Meaning, importance and steps of planning
- Health risk appraisal and management issues
- PRECED, PROCEED framework of health education diagnosis, planning and evaluation: Concept, steps and its application in priority PHC program interventions
- Different planning approaches in health promotion and education

Unit-IV: Implementation, Monitoring and Evaluation of Health Promotion and Education Program

15 hours

- Implementation approaches (community, organization, leadership, participation)
- Monitoring indicator promotion of health education program (process, effects and impact indicators)

References

1. Armin MF Goidschmidt. Bemd Hofer, *Communication between Doctor and Patients in Thailand*. Saarbncken 1972.
2. David K. Berio. *The process of communication*. Holt. Rinehart and Winston inc. 1960
3. Devid Bedworh & Albert Bed Worth. *Health Education: A Process of human effectiveness*. Harper and raw NY, 1978
4. Freire Paulo. *Pedagogy of Oppressed*. New York, the Seaburt Press. 1974
5. Guilbert.J.J. *Educational Hand book for Health professional*, Geneva: WHO, 1977
6. International Journal of Health Promotion and Education, Quarterly- An official publication of International Union of Health Promotion and Education; Different volumes
7. Joseph Luft. *Group Processes - An introduction to group dynamics*. Joseph 2nd edition, 1970
8. Murray G. Ross. *Community Organization*. Harper and Row Publishers , 1964
9. Skinner, B.F. *About Behaviouralism*, New York, Alped A Knoff. 1974.

BPH
Third Year
Fifth Semester

EOH 301.3 (Credit Hours 3)

Applied Environmental and Occupational Health I BPH, Third Year, Fifth Semester

Course Objective

To help understand the fundamental relation between environments, occupational practices and public health and to provide the framework for the improvement of public health through the management of environmental resources. Upon successful completion of the course students shall be able to:

- Explore the relationship between environmental resources, occupational practices and public health
- Understand the importance and implication of ecological life support system and the ecosystem health on human health and livelihood.
- Apply environmental (ecosystem) management approaches to improve human health.
- Describe the concept of environmental burden of human diseases and occupational health; interlink diseases and public health problems to the degradation of environmental resources and occupational policies.

Course Contents:

Unit-I: 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-II: 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-III: 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

Unit-IV: Occupational Health and Safety Development 12 Hours

- Application of concept of occupational health and safety in Nepal
- Major occupational diseases in Nepal
- Control and treatment of occupational diseases
- Policies related to occupational health
- Promotion of occupational health
- Critical analysis of programs related to occupational health

Unit-V: Environmental Toxicology 12 Hours

- Basic concept of environmental toxicology
- Air, soil and water pollution
- Food and food additives
- Risk assessment and monitoring
- Factors influencing toxicity
- Route of exposure and toxicity
- Management of environmental toxicity problem

- Emergence of resistance

References:

1. Allen, T.F.H and T.W. Hoekstra, *Towards a unified ecology*, Columbia University 1992.
2. Baldwin, John. *Environmental planning and management*, Westview Press, Boulder and London 1985.
3. Carson, Walter. *The Global Ecology Handbook*, Boston, USA 1990.
4. Capra, Frijof. *The turning point: Science, society and the rising culture*, Published by Fontana Paperbacks 1982.
5. DHS. *Annual report of department of health services*, Nepal, 2003.
6. Corson, W.H. *The global ecology handbook*, beacon press, Boston, USA 1990.
7. Dhaliwal, Snagha and Ralhan. *Fundamentals of environmental science*, Kalyani publishers, New Delhi, India 1996.
8. Miller, G. Typler. *Environmental Science*, Wadsworth publishing company, Belmont, California 1988.
9. Odum. *Fundamentals of ecology*, Saunders College Publishing, 1971.
10. Wilson, E.O. *Biodiversity*, National Academy Press, Washington. D.C., 1988.

FDN 302.3 (Credit Hours 3)

Food and Nutrition-II BPH, Third Year, Fifth 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. His Majesties Government of Nepal, Department of Health Services. Annual Report, 2003/2004
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* 2001, Kathmandu: 2002
7. Swaminathan M. *Advanced textbooks on foods and nutrition*, Volume II & I. India: Bappco 1990.

8. ILSI- Current Knowledge in Food Nutrition. Washington
HRD 303.3(Credit Hours 3)

Human Resource Development
BPH, Third Year, Fifth Semester

Course Objective

To enable the students in projecting, 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.

PHC 304.3 (Credit hours 3)

Primary Health Care in Nepal BPH, Third Year, Fifth Semester

Course Objective

To develop knowledge on the development, practice and strengths and limitations of primary health services in Nepal. Upon successful completion of the course students will be able to:

- Appraise the development of primary health care (PHC) in Nepal
- Review the components of PHC in Nepal
- Explore the problems and major challenges of components in implementing PHC
- Evaluate PHC components in Nepal

Course Contents:

Unit-I: Development of PHC in Nepal

16 Hours

- Introduction to primary health care (PHC)
- Milestones of the development of PHC in Nepal
- Primary health care and essential health care
- Basic health services and primary health care
- Alma Ata Conference on PHC: Introduction and description of the deceleration of Alma Ata and Nepal after signature
- Selective vs. comprehensive PHC
- Overview of formulation strategies for health for all by the year 2000 and beyond and its achievements.
- Program to meet Basic Health Needs.
- Role of the District Public Health Office in implementing PHC components.

Unit-II: Components of PHC in Nepal

10 Hours

- Review of PHC components in Nepal
- Success and failure studies of PHC components in Nepal

Unit-III: Problems in implementing PHC

10 Hours

- Problems of challenges during implementation of PHC components
- Service factors
- Economical factors
- Political factors
- Social-cultural factors
- Critiques on PHC
- Mitigation measures of challenges and problems

Unit -IV: Research related to PHC and their application in Nepal

12 Hours

- Desk review of the research work
- Web based search
- Unpublished documents
- Development of a roster
- Monitoring and evaluation indicators of PHC components

References:

1. David Werner and David Sanders. Questioning the solution: the politics of primary health care and child survival. *Health rights*, 1997.
2. Department of Health Services. Annual report 2003.
3. Dixit H. *Quest of Health*, Educational Enterprise, 1999.
4. Family Planning Manger's Hand Book.
5. 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*. 22 (3), 290-306, 1995.
6. Health Policy of Nepal 1991, MOH, HMG/N
7. Joshi M, Adhikari R. *Manual of drug and therapeutics*, HLMC. 1996
8. American Public Health Association (APHA): www.apha.org
9. Beijing 4th World Conference on Women: www.igc.org/beijing/beijing.html
10. Centers for Disease Control and Prevention (CDC): www.cdc.gov
11. CEDAW: www.un.org/womenwatch/daw/cedaw
12. CEDAW Coalition: www.womenstreaty.org
13. Center for Education, Development and Population Assistance (CEDPA): www.cedpa.org
14. Center for International Health Information (CIHI): www.cihi.com
15. Demographic and Health Surveys: www.macrint.com/dhs
16. Doctors Without Borders: www.dwb.org
17. Engender Health: www.engenderhealth.org
18. Equality Now: www.equalitynow.org
19. Feminist Women's Health Centre: www.fwhc.org

HSD 204.3 (Credit hours 3)

Health Systems Development II BPH, Third Year, Fifth 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: Central 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: Regional, Zonal and District Health Services Management

8 hours

- Study of regional, zonal and district health services
- Functions
- Organizational structure
- Human resource for health.
- Job descriptions
- Budget
- Program
- Control and management of health posts and Sub-health Posts.
- Responsibility towards regional 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, sub-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.
 - Ministry of Education
 - Ministry of Agriculture
 - Ministry of Women and Social Welfare
 - Ministry of Population and Environment
 - Ministry of Housing and Physical Plan.
 - Ministry of Local Development;
- Regional level
- Zonal level
- District Level
 - Educational Institutions
 - Agricultural institutions
 - Local Authorities
 - CDO.
 - District Development Concern
 - Different organization/clubs/ industries
 - NGOs/INGOs
 - Hospitals
- Peripheral level

- Schools
- Agricultural Offices / Authorities
- VDC's
- Different organization / clubs / industries

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. 2003
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

**BPH
Third Year
Sixth Semester**

REM 306.3 (Credit hours 3)

Research Methodology BPH, Third Year, Sixth Semester

Course Objectives:

To develop the student's skill in identifying the researchable problems and conducting public health research coupled with the relevant techniques of data collection and research report/paper writing process. After 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 Problem, and Hypothesis

5 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 Indicators

6 hours

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

Unit-IV: Sampling Methods and Techniques

5 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 Design

12 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

10 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**2 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)

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.

FAH 307.3 (Credit hours 3)

Family Health
BPH, Third Year, Sixth Semester

Course Objectives:

To develop basic concepts of family Health for an efficient and effective management of its problems. At the completion of the course, students will be able to:

- Understand to give basic knowledge, concept, philosophies of demography and reproductive [family] health and their problems primarily focused in Nepal
- Conceptualize the main problem(s) of RH and work on it through exercises on secondary data
- Acquire applied knowledge and skills on the burden of elderly and disable persons health.

Course Contents:**Unit-I: Concept and historical development Family Health****8 hours**

- Concept, history and definition of family, family health
- Scope, role and functions, of family health in prevention, promotion, treatment and rehabilitation of health
- Concept of adolescent health and sex education
- Existing health services and RH policies service, plan and programs in the management of National Health Service delivery system in Nepal
- Population dynamics and RH and family health

Unit-II: Reproductive health and safer motherhood services

8 hours

- Concept, theories, principles, components, and the factors of RH and SM services
- Provision and status of RH and SM care services in Nepal
- Mortality and morbidity factors associated with RH and SM
- Patterns of communicable and non-communicable disease problem concerning to RH and SM
- RH and SM related health problems in Nepal

Unit-III: Family Planning (FP) services in Nepal and the region

8 hours

- Principles, philosophies, concept and the strategies of Family planning
- Methods of family planning and counseling
- Challenges of FP contraception in context to population control in Nepal and the region
- Quality assurance in family planning service delivery

Unit-IV: Demography**16 hours**

- Introduction to demographic studies
- Concept, theories and methods of demography
- Structural components and characteristics of demography and its application in health sciences studies Methods of population projection and its application in health and public health science studies
- Demographic health surveys in Nepal

Unit-V: Overview of ageing and disables health**8 hours**

- Concept, meaning and scope of ageing population
- Strategies of health of elderly, disables in global and regional context
- Geriatrics and disable health problem under family health care settings in Nepal
- Major health problem of ageing and disables
- Policy, strategy and programs for ageing and disable population

References:

1. Ministry of Health (MoH), Nepal. National health policy- 1991
2. Ministry of Health (MoH), Nepal. National reproductive health strategy
3. Ministry of Health (MoH), Nepal. National adolescent health strategy
4. Ministry of Health (MoH), Nepal. National AIDS policy
5. Ministry of Health (MoH), Nepal. Family planning policy
6. Ministry of Health (MoH), Nepal. Safe motherhood policy
7. Ministry of Health (MoH), Nepal. National maternity care guidelines
8. Ministry of Health (MoH), Nepal. Reproductive health protocols
9. Ministry of Health (MoH), Nepal. STD case management guidelines
10. National medical standard vol. I & II & II'
11. Population and development L/NFPA. Cairo- 1994
12. Convention on elimination of discrimination against women- UNESCO
13. Beijing conference on women- 1997

Applied Child Health

BPH, Third Year, Sixth Semester

Course Objectives:

To develop basic knowledge and skills about the concepts, strategies and experiences of child health (CH) policies and plan in Nepal so as to make them able to design, collect required information related to the community and the public health sector. ng and monitoring the services. Upon successful completion of the course, students shall be able to:

- Understand the child health care policy, plan and programs in Nepal
- Conceptualize, experience, work on child health problems
- Acquire practical knowledge and skills on CH problems of Nepal and the region

Course Contents:

Unit-I: Introduction to Child Health (CH) 16 hours

- Introduction to child health
- CH in individual, family and society
- Child health and national health care system
- Child health and international or global health system
 - Intervention, declaration on health

Unit-II: Child health problems 16 hours

- Demographic, Socioeconomic and Socio-cultural Indicators
- Environmental health Indicators
- Child health and disability
- Malnutrition
- Vaccine preventable disease
- CDD/ARI
- Child health disease burden in Nepal
 - Vital rates, ratio and proportions
 - Morbidity indicators
 - Mortality indicators
 - Health service indicators
 - Population and fertility indicators
 - Physical health and development indicators
 - Nutritional health indicators
 - Child health and sexual health problem

Unit-III: Application of Child Health Services in Nepal 16 hours

- Existing child health policy, plan and program in Nepal and SAARC
- Child health problem and intervention plans
 - Process of planning (identification, and prioritization)
 - Application of problem solving strategy in CH interventions
 - Review of CH promotion strategy as a regional/global concern
 - IMCI

References:

1. National health policy- 1991
2. National reproductive health strategy
3. National adolescent health strategy
4. National AIDS policy

5. Family planning policy
6. Safe motherhood policy
7. National maternity care guidelines
8. Reproductive health protocols
9. 9. Current Annual report of Department of Health services

EOH 309.3 (Credit hours 3)

Applied Environmental and Occupational Health II BPH, Third Year, Sixth Semester

Course Objectives:

To explore the fundamental relation between hospital waste management, human excreta, environmental pollution, occupational health and public health. At the end of the course, students shall be able to:

- Explain the environmental problems and its affects on human health
- Clarify the relationship between hospital waste and health impacts
- Explore the affects of human excreta in public health
- Explore the occupational health and safety issues

Course Contents

Unit-I: Environmental Problems

10 hours

- Overview of global environmental problems (Radiation, Acid Rain, Ozone Depletion, Deforestation)
- Causes of global warming (Carbon Dioxides, Methane, Chlorofluorocarbons, Nitrous Oxides, Ozone)
- Global warming, green house effect, ozone depletion and climate change
- Impacts of global warming and climate change on human health

Unit-II: Hospital Waste Management

12 hours

- Nature and types of hospital waste
- Health hazard from hospital waste
- Management of hospital waste in public and private hospital

Unit-III: Human Excreta

8 hours

- Use of toilet in Nepal
- Health hazard from human excreta
- Management of human excreta in rural and urban areas

Unit-IV: Occupational Health and Safety

18 hours

- Meaning, scope and application of occupational health and safety
- Historical development of occupational health.
- Workman's compensation
- Occupational health practice applied to specific exposure
 1. Physical
 2. Biological
 3. Chemical
- Occupational diseases and their prevention

References:

1. Baldwin, J. H. *Environmental Planning and Management*, West View Press, Boulder and London, 1985.
2. Beacon Press, MOPE, State of the Environment of Nepal, Kathmandu: Ministry of
3. Dhaliwal G. S. *Fundamentals of Environmental Sciences*, Kalyani Publishers, New Delhi 1996.
4. IUCN. *Environmental Education*, Source Book, Published by IUCN Nepal 2000.
5. Miller T. *Environmental Science*. USA: Wadsworth Inc 1988.
6. Miller G. T. *Living in the Environment*, Publishing Company, Belmont. California 2002.
7. MOPE/ICIMOD/UNEP. Nepal: State of the Environment Report 2001. Kathmandu: UNEP /ICIMOD 2001.
8. Ojha. S. *Watawarniya swasthya re sarsaphai*, Kathmandu: Health Learning, Material Centre BS 2046.
9. Park, JE and Park K. *Textbook of Preventive and Social Medicine*, India 2000.
10. Sloan WM. *Site selection for new hazardous waste management facilities*. WHO 1993.
11. WHO. Health Organization. *WHO commission on health and environment*. Report of the panel on food and agriculture. Geneva: WHO 1992.
12. Wagner EG., Lanoix JN. *Excreta disposal for rural areas and small comities*. WHO.
13. WHO HACCP. *Hazard Analysis and Critical Control Point: Principle and Practice*, WHO: Geneva, 1999.

CMD 310.3 (Credit hours 3)

Community Diagnosis

BPH, Third Year, Sixth Semester

Course Objective

To provide basic knowledge on concepts, process skills to the students in scientific designing and collecting the information of the community. At the successful completion of the course, students will be:

- 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

15 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 of Community Diagnosis (CD)

15 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

15 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

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

Unit-V: Presentation

45 hours

a. Presentation of written report

Student will timely submit their group's written final report that have maintaining its quality standards as prescribed by the institute. For example, formatting, editing, and referencing system should maintain its prescribed norms

b. Oral presentation

Student should strategically, present preliminary findings of their community health diagnosis field works to their guide or supervisor first in the given (scheduled) date, time. Then they should present those preliminary findings to the concerned community peoples at field site to maintain the philosophy of appropriate and effective feed-back values. Finally, those student's group should present their community diagnosis report to the concerned Institution's faculty members for final evaluation

Unit-VI: Report Writing and Evaluation

45 hours

- Content and structures of a good report writing
- Organization, formatting, editing... a good report
- Designing an evaluation tools of CD survey report
- Maintaining the ethical considerations in a CD survey report

Course Evaluation:

A. Evaluation criteria for theory class:

Written Exam: 40%

Assessment: 10%

Field Practice: 60%

B. Evaluation criteria for residential field practice:

- | | |
|--------------------------------------------------------------------|---|
| • Rapport building, community mapping | 5 |
| • Assessment of utilization of internal/local – external resources | 5 |
| • Community mobilization and group's dynamics | 5 |
| • Review, implement the designed community diagnosis survey | 5 |
| • Preparing preliminary findings and discussion notes | 5 |
| • Plan, schedule operate and evaluate micro-health project | 5 |

C. Evaluation criteria for presentation

- | | |
|-------------------------------------------------------------------------|----|
| 1. Presentation of written report and its submission (timeliness) | 15 |
| 2. Oral presentation | 15 |
| i. Oral presentation of preliminary findings to the supervisor(s) (10%) | |
| ii. Oral presentation of preliminary finding to community peoples (40%) | |
| iii. Oral presentation at the Institute (50%) | |

D. For the evaluation of written report

- | | |
|----------------------------------------------------|---|
| Content and structures of the report | 5 |
| Organization, formatting, editing... of the report | 5 |
| Evaluation criteria of the report | 5 |
| Ethical considerations of the report | 5 |

References:

1. Bannett, F.J., Prof., Ed. Lagos Melbourne, 1979, 1-190 (14). *Community diagnosis and health action, a manual for tropical and rural areas*. Hong Kong: The Macmillan Press Ltd., Johannesburg
2. Hale, S. Dr, Shrestha, I.B., Bhattacharya, A. *Community Diagnosis Manual, learning together from community diagnosis*. Kathmandu: Health Learning Materials Center, Tribhuvan University, Institute of Medicine, printed at Modern printing press (P) Ltd., 1-100 (10).

**BPH
Fourth Year
Seventh Semester**

HPD 401.3 (Credit hours 3)

**Health Planning and Policy Development
BPH, Fourth Year, Seventh Semester**

Course Objectives:

To develop the knowledge and skill of students in the development of health policy and plan. Curriculum also intends to impart the knowledge on monitoring and evaluation. At the end of the course students will be able to:

- Understand concepts and application of planning
- Develop, monitor and evaluate the plans
- Know the concepts and application of policy
- Critically review of the health policies in Nepal

Course Contents

Unit-I: Concept and Application of Planning

10 hours

- Meaning, scope , concept of planning
- Approaches to planning: planning model, national planning, private and public sector planning

- Application of planning in Public Health
- Strategic planning

Unit-II: Developing, Monitoring and Evaluating Health Plan **14 hours**

- Different types of planning
- Planning used in delivering the health services
- Monitoring of planning
- Evaluation of the developed plan

Unit-III: Concept and Application of Policy **14 hours**

- Meaning, scope and concept of policy
- Types of policy
- Application of policy in public health

Unit-IV: Critical Review of Health Plan and Policies in Nepal **10 hours**

- Review of the health policies in Nepal
- Priority Setting
- Resource allocation and budget and budgeting process

References:

1. Greem A. An introduction to health planning in developing of counties. Oxford University Press. 1997.
2. African National Congress. *A National Health Plan for South Africa*.
3. Barker C. *The health care policy process*. London: Sage Publications, 1996.
4. Barnum H, Kutzin J. *Public hospitals in developing countries: resource use*,
5. Boule A, Blecher M., Burn A. Hospital Restructuring.: Health Systems
6. Brijlal V, Hensher M. *Estimating the costs of implementing the Primary Health*
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8. Dixit H. *Quest of Health*, Educational Enterprise, 1999.
9. HMGN, MOH. *Human Resource Strategic Plan, 2003 -2017*. Ministry of Health, Ramsaha Path, Katmandu. April. 2003
10. HMGN, MOH. Second long term Health Plan 1997-2017. 1998
11. American Public Health Association (APHA): www.apha.org
12. Beijing 4th World Conference on Women: www.igc.org/beijing/beijing.html
13. Centers for Disease Control and Prevention (CDC): www.cdc.gov
14. CEDAW: www.un.org/womenwatch/daw/cedaw
15. CEDAW Coalition: www.womenstreaty.org

HEC 402.3 (Credit hours 3)

Health Economics
BPH, Fourth Year, Seventh Semester

Course Objectives:

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, Externalities
- 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
- The 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. *Microeconomics*, 5th Edition
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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: Fundamentals 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
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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*
16. Barbara Mcpack, Lilani Kumaranayake and Charles Normand. *Health Economics: An International Perspective*, Routledge 11 New Fetter Lane, London, 2002
17. Ministry of Health and Population. *Nepal National Health Accounts*
18. The World Bank. *World Development Report: Investing in Health*, 1993
19. www.healtheconomics.com
20. www.chepa.org/ - 26k
21. www.chere.uts.edu.au/
22. www.chula.ac.th
23. <http://www.oheschools.org>
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25. www.york.ac.uk/inst/che
26. www.who.int
27. www.healtheconomics.org
28. www.heapol.oupjournals.org
29. www.interscience.wiley.com
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Journals

1. *Health Policy and Planning: A Journal on Health in development*. Oxford University Press.
2. *Health Economics: A Journal of Health Economics*

RCA 403.3 (Credit hours 3)

Health System Research and Computer Software Application BPH, Fourth Year, Seventh Semester

Course Objectives:

To impart the knowledge on Health Systems Research, Health Research Systems and Health Research Review Process. To strengthen the knowledge on computer software application. After the completion of the course, the students will be able to:

- Understand the key concepts on health systems research and health research system
- Identify, analyze and write the statement of health systems research
- Review the Health Research Projects
- Use the different kinds of software in computer

Course Contents

Unit-I: Introduction

6 hours

- Definition of Health Systems Research (HSR), Health Research Systems (HRS)
- Application of HSR in the Development of Nation's Health System
- Characteristics of HSR

Unit-II: Health Systems

8 hours

- National Health Systems
- Overview of Health Sector Reform in Nepal
- Health Sector Planning and Programming
- Public/Private Sector Health Care Services

Unit-III: Health Systems Research

10 hours

- Identification and Analysis of HSR Problem
- Generation of HSR Hypothesis
- HSR Variables, their Scales of measurements, and Indicators
- Qualitative and Quantitative Methods in HSR

Unit-IV: Health Research System

5 hours

- National Health Research Policy
- Architecture of Health Research System
- National Strategies for Health Research System Development
- Networking and Co-ordination
- Development of Sustainable Health Research System

Unit-V: Health Research Review Process

5 hours

- Concepts on Review Process
- Format used for Health Research Review Process
- Research Review Guideline
- Health Program Evaluation

Unit-VI: Computer Software Application

14 hours

- General Introduction to Computer and its Accessories
- General Concepts on Microsoft Windows
- Basics in Excels, and PowerPoint
- Various kinds of Statistical Software used in Computer
- Use of Epi-2000 in Computer
- Use of SPSS in Computer

References:

1. *Health Sector Strategy: An Agenda for Reform*, HMG/N, Ministry of Health, 2004.
2. Laws S, Harper, Marcus R. *Research for Development: A Practical Guide*, Save the Children, Vistaar Publication, New Delhi, 2003.
3. *National Health Research Policy of Nepal*, Nepal health Research Council, 2003.

4. Andreano R. *The International Health Policy Program*, The University of Wisconsin Press, 2537 Daniels Street, Madison, Wisconsin 53718, 2001.
5. Grembowski D. *The Practice of Health Program Evaluation*, Sage Publication, Inc., 2001.
6. Black N, Brazier J, Fitzpatrick R, Reeves B. *Health Services Research Methods: A Guide to best Practice*, BMJ Books, 1998.
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8. MHP. Nepal Health Sector Program- Implementation Plan 2004-2009.

CFP 404.3 (Credit hours 3)

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 identify 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 Practice	Field	<ul style="list-style-type: none">• Evaluation by Local Filed Supervisor..... 5 %• Evaluation by Campus/Institute Supervisor20 %• District Seminar 10 %• Presentation of Filed Work at Campus/Institute.....15 %• Evaluation of Written Report (District Profile).....20 %• Micro-Health Project.....10 %• Oral Defense of Written Report and Filed Work20 %
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BPH
Fourth Year
Eighth Semester

DIS 406.6 (Credit hours 6)**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

Proposal Development:

At the beginning of fourth year (Seventh Semester), students in a group of five in consultation with designated faculties and extensive literature survey will develop research proposal during the initial 3 months period.

Data Collection/ Thesis Writing

Students will carry out data collection, data management, data analysis, and thesis writing during the remaining period (Seventh and Eight Semester).

The Dissertation should have following format:

1. Title
2. Introduction
3. Materials and Methods
4. Results
5. Discussion
6. Conclusion
7. Recommendation
8. References
9. Appendix

Evaluation:

Internal: 50% weight

Thesis Defense and Viva: 50% weight