

**DISCIPLINE SPECIFIC ELECTIVE COURSE - (BIOMED-DSE- ) SOCIAL AND PREVENTIVE MEDICINE**

**CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE**

<b>Course title &amp; Code</b>	<b>Credits</b>	<b>Credit distribution of the course</b>			<b>Eligibility criteria</b>	<b>Pre-requisite of the course (if any)</b>
		<b>Lecture</b>	<b>Tutorial</b>	<b>Practical/Practice</b>		
<b>SOCIAL AND PREVENTIVE MEDICINE</b>	<b>4</b>	<b>3</b>	<b>0</b>	<b>1</b>	<b>XII Passed</b>	Student should have studied science (Biological science/ Physical sciences)

**Learning objectives**

- The origin of medicine to alleviate human suffering from disease, and control of disease is as old as origin of human itself. Various civilizations practiced their own methods to treat and control diseases.
- The modern form of medicine that has evolved over time, is composed of two main branches viz: Curative medicine and Preventive medicine/Public health. It has been realized that causes of diseases are multifactorial- a disease can have multiple causes/factors such as social, economic, genetic, psychological and environmental factors.
- In the centre of modern medicine is epidemiology, which is concerned with measuring distribution patterns and determinants of disease in a Population/community, and needs of health related services.
- The health related services are delivered through health programmes and health systems to various risk groups such as at risk-mothers, at risk-infants, elderly or chronically ill patients.

**Learning outcomes**

- Introduction to various concepts of health and disease, factors determining health of individuals or population/community, interaction of factors in causing disease. Students will also be introduced to the concepts of levels of prevention adopted to achieve a state of health or to preserve health.
- Epidemiology is in the core of basic science of social preventive and medicine, and is concerned with study/measurement of the distribution and determinants of health related issues. Students will be introduced to the concepts of epidemiology, various methods and approaches that are used to measure the intensity and distribution of health related issues in the community/population.
- Introduction to the various definitions/ concepts related to natural history of disease viz: mode of disease transmission and progress of infection/disease in the host. Students would get opportunity to learn natural history of communicable disease, diagnosis, treatment and control, and various health programmes for prevention (with examples of certain prevalent diseases in India. Through examples of few diseases prevalent in India and globally, epidemiology of those diseases which are considered as lifestyle diseases or multi-factorial diseases will be introduced.
- The definition of health also includes dimensions of social and mental well-being. Therefore, mental illness has been recognized as one of the important health issues. Students will be introduced to the various types of mental illness and its prevention.
- Infertility is a worldwide problem, and estimates of infertility in India are about 4-6 percent. Childlessness is social and demographic implications. The etiology of infertility is variable. Mother and children are considered as special-risk group in a population, and is a priority group in any community. The mother, and the growth and development of fetus/ infants are at the risk of several health problems. Further, under certain circumstances, their survival too is at risk. The multitude of problems affecting the health of mother and child constitutes serious health problems in a developing country. Students will be introduced to the various maternal and child health related problems/ complications (and their prevention), from conception to the birth of infants.
- Health has been declared a fundamental human right and has to be delivered by the governments to all. Therefore, there is a system to promote and provide health services to every individual living in urban or rural settings. Students will be introduced briefly about the system of health care and various levels of health care in India.

## **SYLLABUS**

**Unit I: Basic concepts of health and disease** (06 hrs)

Definition, determinants and indicators of health and disease, demography (transition, and sources of demographic data, registries), survey methodology including census procedures and sampling. epidemiological triad. Multi-factorial aetiology of disease. Concepts of prevention and control.

**Unit II: Epidemiology and epidemiological methods** (06 hrs)

Definition and history, components of epidemiological studies viz. disease frequency, distribution and determinants. Basic measurements/tools in epidemiology: rates, ratios and proportions (mortality and morbidity rates and ratios, prevalence, incidence); epidemiological studies: descriptive, analytical, randomized controlled trials. Concept of association and causation. Brief introduction to modern epidemiological tools.

**Unit III: Epidemiology of diseases** (16 hrs)

Various definitions: epidemic, endemic, pandemic, sporadic, nosocomial infections etc. Cases, carriers, transmission of disease, concept of incubation period, generation time, communicable period and secondary attack rate.

- a. Communicable diseases: control and health care programs for of national importance (extent of problem in India and worldwide, main clinical features, diagnosis, treatment & resistance, immunization and prevention practices, health programmes (if applicable):

*Respiratory infections:* *Tuberculosis*

*Intestinal infections:* *Cholera*

*Arthropod-borne infections:* *Malaria*

*Zoonosis:* *Rabies*

*Sexually transmitted infection:* *AIDS*

- b. Non-communicable disease: control and health care programs for of national importance (extent of problem, diagnosis, treatment and control, health programmes (if applicable):  
Hypertension, stroke, diabetes, breast cancer.

**Unit IV: Mental health** (05 hrs)

Introduction and scope. Features of mentally healthy person, signs of poor mental health, types of mental health (anxiety and depression), and prevention. National Mental Health Programme

(NMHP).

**Unit V: Infertility, mother and child health (06 hrs)**

Measures of fertility and factors affecting fertility, child health, maternal health, immunization programme.

**Unit VI: Health care system in India (06 hrs)**

Concept of health care, levels of health care, brief introduction to Primary Health Care in India (village level, sub-centre level, primary health centre level, community health centre level, hospitals).National Programme for Health Care of the Elderly (NPHCE).

**Practical (30 hrs)**

(Wherever wet lab experiments are not possible, the principles and concepts can be demonstrated through any other material or medium including videos/virtual labs etc.)

1. To explore any publically available database for tuberculosis/typhoid and study its epidemiology in the Indian population.
2. To study the epidemiology of malaria including geographical and seasonal distributions in India through a public database.
3. To study various parameters like risk factors, incidence, prevalence, mortality rate and DALYs. for any specific type of cancer prevalent in India through NCRP or any other public database.
4. To study the burden and causes of any hematological disorder in the Indian population.
5. To explore and analyse various national and international disease databases like ICMR/WHO/CDC/ etc.
6. To prepare a questionnaire for any health condition studied in S.No. 1-5.
- 7-10. To prepare a poster/ presentation using any digital media to communicate about the epidemiology and to create awareness about any health condition studied in S.No. 1-5.

**Essential reading**

- Park, K. (2021), 26<sup>th</sup> Edition, *Park's Textbook of Preventive and Social Medicine*,

**Suggestive reading:**

- Bonita, Ruth, Beaglehole, Robert, Kjellström, Tord & World Health Organization. (2006) 2<sup>nd</sup> edition. *Basic Epidemiology*, World Health Organization, ISBN 978 92 4 154707 9.