

SEC : Public health, hygiene and nutrition

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credistributiofthecourse			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
SEC-	2	0	NIL	2	Class XII	NIL

Learning Objectives

In the post covid scenario, the students have experienced live the various area where public health is of primary importance. The present course attempts to provide an interdisciplinary understanding of public health issues in India. Learning about processes of proper waste disposal and management of water will have great impact on human health as unsafe drinking water and sanitation was the second leading risk responsible for disease burden in India, mainly through diarrhea and other infections. The specific objectives of the course are:

- To provide a basic understanding of the scope of public health issues, particularly related to collection of primary data in the area of public health nutrition, infectious biology and sanitation, social and preventive medicine, and the environmental issues that affect public health.
- To generate a discussion platform that would encourage a healthy inter- and multidisciplinary interaction amongst the students to get a holistic view of public health issues in India.
- A mini research project on any relevant topic related to public health will be taken up after completing the course.
- After completing the course, the students can also apply for some higher-level courses in different areas of public health as the course helps in building a basic understanding on different aspects related to public health

Eligibility: Being interdisciplinary in its nature and scope, the course will be equally engaging and beneficial for students of all subject streams.

Learning Outcomes

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

- get a holistic overview of the inter disciplinary nature of Public health. They will be able to understand and address behavioral, social and cultural factors that impact individual and population health disparities.
- understand public health issues in India particularly related to Malnutrition,

sanitation issues and related burden of infectious disease, and the role of pollution as a public health concern.

- gets hands-on training on preparation of questionnaire and collection of primary and secondary data relevant to public health issues. They will be trained to use epidemiological methods to analyze patterns of disease progression in a population and describe applications and programs that can help address or mitigate the issue.
- To study various factors deteriorating quality of water by collecting samples from various parts of cities. Check TDS, pH, colour, odour, and transparency of water sample.
- Study of probable causes of stress and mental health problems. Design of some remedial strategies to overcome these problems.
- They will also learn to present the relevant data after subjecting it to statistical analysis. They will be able to identify and apply the appropriate statistical method needed to analyze and describe a public health problem.

Skill development and job opportunities:

Public health professionals are involved in everything from identifying diseases to creating public policy to helping refugees integrate into new communities. Now more than ever most of the world has witnessed first-hand a public health crisis and there will be no shortage or demand for well-trained public health professionals.

- After completion the course, students will be able to have career opportunities that include Medical and Health Services Manager, Biostatistician, Health care consultant, Epidemiologist, Occupational Health and Safety Specialist, Social and Community Service Manager, Health Education Special

SYLLABUS OF SEC

Unit I: Introduction to public health and hygiene

3 weeks

Significance of public health, and hygiene to prevent spread of diseases (e.g. TB, leprosy, cholera, food poisoning etc.). Introduction to health care and **WASH** (Water, Sanitation and Hygiene)

Practical exercises:

1. To study various hygiene practices like personal, menstrual, oral and hand hygiene etc.
2. Field visit for understanding the health programs and hygiene like Asha worker interviews/Sulabh international museum of toilets/Water Treatment Plant (any one)

Unit II: Public health Biology

7 weeks

What is public health nutrition? Application of nutrition concepts to design programs of public health concern, What are communicable diseases?

Understanding the biology, socioeconomic factors and other environmental conditions that influence the transmission and infection by pathogenic (disease-causing) bacteria, viruses, parasites, and fungi.

Practical exercises

Assessment of nutritional status using anthropometric indices like BMI, WHR.

Assessment of Nutritional status by a survey of clinical and non-invasive biochemical parameters.

- To study the following medically important organisms like mosquito, house fly cockroach and rats as transmission vectors for infectious disease
- Measuring blood pressure and correlating it with lifestyle.
- Case study of a disease (Nutritional, infectious and lifestyle) along with the public health data with analysis and discussion

Unit III: Environmental determinants of Public Health

5 weeks

Determinants of Environmental Health: factors that affect environmental health; Occupational environment and health concerns; Understanding effect of air, water and soil Pollution on health.

Practical exercises:

- To determine the portability of water using, pH, BOD, COD and MPN of the water sample from different sources.
- Collecting secondary data on AQI from different areas and correlate with health indices in that area.
- Field visits to nearby health care center to collect some data on the rate of a particular disease over past few months or years.

Essential/Recommended readings

1. Aschengrau A, Seage G.R., (2013) Essentials Of Epidemiology In Public Health Jones and Bartlett Publishers, Inc; 3rd edition
2. Bamji MS, Rao NP, Reddy V.(2017).Textbook of human nutrition. (4thed). Delhi: Oxford and IBH Publishing co. (P) Ltd.
3. Environmental Microbiology edited by I.L. Pepper, C.P. Gerba, T.J. Gentry. 3rd edition. Academic Press, USA. 2014.

Suggested readings:

1. Gibney et al.(2004). Public health nutrition. Hoboken, NJ: Blackwell Publishing
2. N. Okafor. (2011) Environmental Microbiology of Aquatic and Waste Systems by Springer, USA.
3. Waste Water Microbiology by D.H. Bergey. 2nd Edition. Medtech, India. 2019.
4. Park, K. (2017), Preventive and Social Medicine, B.B. Publishers.

5. Engelkirk P.G. and Duben-Engelkirk J. (2015) Burton's Microbiology for the HealthSciences, 10th Edn. Wolters Kluwer Health.
6. Shanmugavel, G. and George, B. Textbook of public health and hygiene. Darshan Publishers, 25-Jan-2021

Examination scheme and mode:

Total Marks: 50

Internal Assessment (Practical): 25 marks

End Semester Practical Exam*: 25 marks

The Internal Assessment for the course may include Class participation, Assignments, Class tests, Projects, Field Work, Presentations, amongst others as decided by the faculty.

For End Semester Practical Exam External to be appointed by the parent Department.