

## OPEN ELECTIVE FOR OTHER DISCIPLINES

### BCE 508: HEALTH AND DISEASE: SOFTCORE

Lecture hours: 36

Total Credits: 03

#### Course objectives

- To study the basic concept on health, hygiene and dimension of health
- To study the communicable, non-communicable and lifestyle diseases and disorders
- Drug abuse, oral hygiene, chain of infections and infection control

#### Unit I

12 hrs.

**Introduction:** WHO definition of health, Health and hygiene, General health care, Factors affecting health, Indices and evaluation of health, Disease patterns in developed and developing world; Classification of diseases - Endemic, Epidemic, Pandemic; Professional Health hazards. **Disease condition:** Acute disease, Chronic disease, Incurable disease, Terminal disease, Illness, disorders, Syndrome, Pre-disease. **Treatment:** Psychotherapy, medications, surgery, medical devices, and self-care. **Dimensions of Health:** physical, mental, social, spiritual, emotional, vocational, political, cultural, socioeconomic, environmental, philosophical, educational, nutritive, curative and preventive.

#### Unit II

12 hrs.

**Communicable diseases** - Tuberculosis, Cholera, Typhoid, Conjunctivitis. **Sexually transmitted diseases (STD)**, Information, statistics, and treatment guidelines for *STD*, Prevention: Syphilis, Gonorrhoea, AIDS etc. **Non-communicable diseases**- Malnutrition- Under nutrition, Over nutrition, Nutritional deficiencies; Anemia, Stroke, Rheumatic heart disease, Coronary heart disease, Cancer, blindness, accidents, mental illness, Iodine deficiency, Fluorosis, Epilepsy, Asthma. **Genetic disorders**- Down's syndrome, Klinefelter's syndrome, Turner's syndrome. **Life style disorders**- Obesity, Liver cirrhosis, Diabetes mellitus, Hypertension (Causative agents, symptoms, diagnosis, treatment, prognosis, prevention)

#### Unit III

12 hrs.

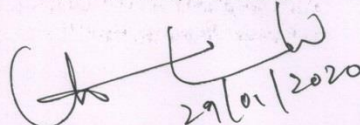
**Health promotion:** Preventing drug abuse, Oral health promotion by tobacco control. **Mental Hygiene and Mental Health** - Concepts of mental hygiene and mental health Characteristics of mentally healthy person - Warning signs of poor mental health - Promotive and preventive mental health – strategies and services - Ego defense mechanisms and implications -Personal and social adjustments - Guidance and Counseling. **Infection control** - Nature of infection - Chain of infection transmission - Defenses against infection transmission

#### Course outcome

- The student understands the basic principles of genetics, gene linkage and X-linked inheritance and cytoplasmic inheritance
- Various causes of mutation and their repair mechanism
- Diseases associated with changes in chromosome number and structures.

#### References:

1. Modern Nutrition in Health and Disease. 10<sup>th</sup> Edition by Maurice E. Shils, Moshe Shike, A Catharine Ross.

  
29/01/2020

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2. Krause's Food and Nutrition Therapy. 12<sup>th</sup> Edition by Janice L. Raymond, L. Kathleen Mahan, Sylvia Escott Stump.
3. Diagnostic Microbiology and Infectious Disease by Mark Holodniy(2016).
4. Health and Disease by Sarah Levette
5. Health and Disease by Adam Hook
6. Public Health and Private Wealth by Sarah Hodges & Mohan Rao

### BCP 509: PRACTICAL MOLECULAR BIOLOGY & IMMUNOBIOLOGY:

#### SOFT CORE

Practical: 8 hours/week

Total Credits: 04

#### Course objectives

- To study the preparation of media for bacterial and fungal growth.
- To learn the techniques of isolating plasmid, and genomic DNA
- Separation of DNA by electrophoresis
- Immunological techniques

#### EXPERIMENTS

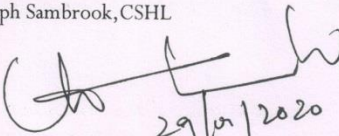
1. Preparation of media, culturing of transgenic *E.coli* and Yeast. Preparation of competent cells.
2. Isolation of DNA and RNA from plant and animal source, purity of DNA.
3. Spectroscopic determination of melting temperature( $T_m$ ) of calf thymus DNA.
4. Electrophoresis of DNA and RNA.
5. Restriction digestion of DNA.
6. Radial immunoassay.
7. Ouchterlony double diffusion
8. Rocket immune-electrophoresis
9. Dot ELISA.
10. Blood group testing.
11. Separation of serum proteins by electrophoresis.
12. Isolation of plasmid

#### Course outcome

- The student understands the basic concept of the preparation of media for bacterial and fungal growth.
- Isolation and separation of plasmid and genomic DNA.
- Immunological techniques.

#### References:

1. Principles and Techniques of Biochemistry and Molecular Biology; 7th Edn. Keith Wilson and John Walker (2012).
2. Principles of Gene Manipulations; 6th Edn. S.B. Primrose, R.M. Twyman, and R.W. Old, Blackwell Science (2012).
3. Gene Cloning Laboratory Manual 4<sup>th</sup>Edn. Michael R. Green and Joseph Sambrook, CSHL Press (2014).

  
29/10/2020