COOCH BEHAR PANCHANAN BARMA UNIVERSITY

PANCHANAN NAGAR, VIVEKANANDA STREET, COOCH BEHAR – 736101

4 Year Under Graduate Degree (Honours)
in
PHYSIOLOGY

Course: *MDC1*

Paper Name: Nutritional Physiology

Paper Code: PHY-MDC1

Course Outcome: In nutritional physiology, the student should be able to understand the nutritional requirement through different stages of life and gain the practical knowledge of displaying raw and cooked food and learn their nutritive value.

Theory: **03 credit**

1. Basic constituents of food and their nutritional significances,
2. Balance diets, Undernutrition, malnutrition and Overnutrition,
3. Calorific value of foods, Body caloric requirements-ACU, Specific dynamic action (SDA), Respiratory quotient, Basic metabolic rate,
4. Dietary requirements and nutritional roles of carbohydrate, protein, lipid, and other nutrients,
5. Vitamins: Daily requirements, dietary source, physiological functions, deficiency symptoms, hypervitaminosis, antivitamins,
6. Minerals: Daily requirements, dietary source, physiological functions, deficiency symptoms,
7. Dietary fibres: dietary source, physiological functions,
8. Physiology of starvation and obesity.

References:

1. Srilakshmi, B. (2016). Nutrition Science. Fifth Edition. New Age International Publishers.
2. Srilakshmi, B. (2014). Dietetics. Seventh Edition. New Age International Publishers.
3. Das S. Textbook of Normal and Therapeutic Nutrition. Academic Publishers.
4. Das S. (2016). Textbook of Community Nutrition. 2nd Edition. Academic Publishers.
5. Basu, P. Nutritional Biochemistry. Academic Publishers.
6. Srilakshmi, B. (2015). Food Science. Sixth Edition. Age International Publishers.
7. Swaminathan, M. (2012). Handbook of Food and Nutrition. Jain Book Agency.
8. Swaminathan, M. (2012). Essentials of Food and Nutrition. Vol. I AND Vol. II. Jain Book Agency.

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Course: *MDC2*

Paper Name: Environmental Physiology

Paper Code: PHY-MDC2

Course outcome: After completion of the course, Students should be able to describe how the body senses and responds to environmental variation. They should understand about the impact of environmental pollutions on human body.

Theory: **03 credit**

1. Air Pollution: Definition, sources, air pollutants, effects of air pollution on human health, concept of ozone hole, green house effects and global warming.
2. Water Pollution: Definition, types, health hazards, water pollutants, biochemical oxygen demand (BOD), thermal pollution, concept of safe drinking water standards.
3. Soil Pollution: Causes, health hazards, solid waste managements- bioremediation, phytoremediation.
4. Sound Pollution: Definition, concept of noise, source of sound pollution, effects of sound pollution on human health, noise index (noise standards).
5. Radionuclide Pollution: Ionizing radiations, effects of ionizing radiation on human health, permissible doses.
6. Arsenic Pollution: Sources, sources of arsenic in ground water, drinking water standard for arsenic (WHO, USEPA), health effects of chronic arsenic poisoning.

References:

1. Understanding Medical Physiology by R.L. Bijlani
2. Review of Medical Physiology by W.F. Ganong
3. Textbook of Medical Physiology by A.C. Guyton
4. Singh, J.S., Singh, S.P. & Gupta, S.R. 2006. Ecology, Environment and Resource Conservation. Anamaya Publications.
5. Wilson, E. O. 1985. The Biological Diversity Crisis. BioScience 35: 700-706.
6. Primack, R.B. 2002. Essentials of Conservation Biology (3rd edition). Sinauer Associates, Sunderland, USA.
7. Singh, J. S., Singh, S.P. & Gupta, S. 2006. Ecology, Environment and Resource Conservation. Anamaya Publications, New Delhi.
8. Sodhi, N.S. & Ehrlich, P.R. (Eds). 2010. Conservation Biology for All. Oxford University Press.

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Course: *MDC3*

Paper Name: Social Physiology

Paper Code: PHY-MDC3

Course outcome: The course will mainly emphasize the basics of various community health issues. Student should also be able to know the etiology, symptoms and prevention of different public health conditions and many other communicable and non-communicable diseases. The student will be able to perform community survey and epidemiological survey on field and will be able to draw inferences from their observations.

Theory: **03 credit**

1. Basic idea about community structure, definition and concept of health and diseases, health system.
2. Population problem – principles and methods of family planning.
3. Health situation in India; diseases: causation and prevention of diseases, mode of intervention, epidemic and endemic forms of diseases, epidemiological triad, web of causation and social determinants of diseases.
4. Principles and social importance of immunization against diseases. National vaccination schedule for infants and children.
5. Social implications of PCM -- Marasmus, Kwashiorkor, Endemic goitre, Nutritional anaemias, Rickets, Osteomalacia, Xeropthalmia, Beriberi.
6. Etiology, epidemiology and prevention -- Communicable diseases: Cholera, Malaria, Swine flu, Japanese Encephalitis, Rabies, Dengue, Hepatitis and AIDS, Kala-azar, Diarrhoeal disorders.
7. Non-communicable and life style diseases – Hypertension, Obesity, Diabetes, Cardiovascular Diseases, Arthritis, Cancer.

References:

1. Understanding Medical Physiology by R.L. Bijlani
2. Review of Medical Physiology by W.F. Ganong
3. Textbook of Medical Physiology by A.C. Guyton
4. Park's Textbook of Preventive and Social Medicine, K.Park, M/s. Banarasidas Bhanot, 2015.
5. Communicable Disease Control Handbook, Jeremy Hawker et.al, Blackwell Publishing.
6. Cheung, S.S. (2010) Adavnced Environmental Physiology. Human Kinetics, Champaign Illinois.