

SYLLABUS & PROGRAMME STRUCTURE

HUMAN PHYSIOLOGY

(General)

(Choice Based Credit System)

(Effective from the Academic Session 2017-2018)

Fifth Semester

MAHARAJA BIR BIKRAM UNIVERSITY
AGARTALA, TRIPURA: 799004

PROGRAMME STRUCTURE

Structure of Proposed CBCS Syllabus for B.Sc. (General)

Semester	Core Course (12)	Ability Enhancement Compulsory Course (AECC) (2)	Skill Enhancement Course (SEC) (4)	Discipline Specific Elective (DSE) (6)
1	DSC- 1 A (Paper-I of choice of subject-I)	AECC-1 Environmental Science		
	DSC- 2 A(Paper-I of choice of subject-II)			
	DSC- 3 A(Paper-I of choice of subject-III)			
2	DSC- 1 B(Paper-II of choice of subject-I)	AECC2 (English/MIL (Communication))		
	DSC- 2 B(Paper-II of choice of subject-II)			
	DSC- 3 B(Paper-II of choice of subject-II)			
3	DSC- 1 C(Paper-III of choice of subject-I)		SEC1 (From Subject-1)	
	DSC- 2 C(Paper-III of choice of subject- II)			
	DSC- 3 C(Paper-III of choice of subject- III)			
4	DSC- 1 D(Paper-IV of choice of subject-I)		SEC2 (From Subject-1I)	
	DSC- 2 D(Paper-IV of choice of subject- II)			
	DSC- 3 D(Paper-IV of choice of subject- III)			
5			SEC3 (From Subject-1II)	DSE1A (From Subject-1)
				DSE2A (From Subject-1I)
				DSE3A (From Subject-1II)
6			SEC4 (From any one of Subject-1, II & III) or from the computer course prescribed for BSc (General)	DSE1B (From Subject-1)
				DSE2B (From Subject-1I)
				DSE3B (From Subject-1II)

Semester – V
DSE – Paper – I (A)
(General)
HUMAN PHYSIOLOGY

Full Marks – 100
(Theory – 70; Practical – 30)

Unit – I

Works, Sports and Exercise Physiology

1. Scope and application of work physiology, Classification of physical work – static and dynamic, positive and negative work, oxygen pulse.
2. Physiological changes during exercise – cardiovascular and respiratory changes. O₂ debt, brief idea about VO₂ max, Lung function test, physical fitness index- Harvard step test.
3. Dopping and dopping test.
4. Anthropometry and its uses, Role of ergonomics in daily life. Principles of physical training.

Unit – II

Nutrition and Dietetics

1. Role of carbohydrates, fats, proteins, vitamins and minerals in nutrition.
2. Nutritional requirements and formulation of balanced diet for adolescents and college students, workers with sedentary, moderate and heavy physical activity, pregnant and lactating women.
3. BMR – definition and determination, controlling factors affecting and its significance.
4. Biological value of protein, RQ, SDA and RDA. Protein Calorie malnutrition – definition, symptoms, classification, major causative factors and remedial measure.
5. Vitamins- source, requirements, deficiency symptoms and functions. Minerals and trace elements- iron, calcium and iodine: source, requirements, deficiency symptoms and physiological functions.
6. Diet survey – principle, significance.

Unit – III

Ergonomics

1. Introduction to Ergonomics : A brief history of ergonomics, Multidisciplinary approach to Ergonomics. Definition and scope of Ergonomics, Role of ergonomics in healthy safety and productivity.
2. Human machine interaction : Introduction to man machine interaction and interfaces, Fundamentals of human computer interaction.
3. Anthropometric considerations in Ergonomics : Definition of anthropometry, Common terminologies used in anthropometry, Different body dimensions measured in anthropometry.
4. Workplace and workplace design : Anthropometric principles in workplace design, Design principles for sitting and standing work.

Unit – IV

Biostatistics and Basic concepts of computer

1. Definition and classification of statistics. Definition of population, parameter and sample. Sampling methods. Frequency distribution & frequency polygon, histogram, bar-diagram, pie diagram.
2. Mean, median, mode and the methods of their computation, merits, demerits and applications. Variance, standard deviation, standard error of mean and their computation.
3. One tail and two tail 't' test for significance of difference between sample means.
4. Computer : Basic concepts of software, hardware and types of computer. Computer packages: concept of MS Word, Excel, Power Point.

Semester – V
Practical
DSE – Paper – IA (General)

Full Marks - 30

1. Determination of VO₂ max using Queen's College Test.
2. Determination of strength by hand grip dynamometer.
3. Basic anthropometric measurement – Height, Weight, MUAC, head circumference, chest circumference, waist circumference, hip circumference etc.
4. Estimation of percentage quantity of carbohydrate in food.
5. Computation of mean, median, mode, standard deviation and standard error of the mean with physiological data like body temperature, pulse rate, respiratory rate, height and weight of human subjects.
6. Assessment of nutritional status of a family as per ICMR specification using diet survey method.

NOTE: *Compulsory for all students to attend the programme, the report of the diet survey should be submitted at the time of practical examination.*
