Gyanmanjari Innovative University

Course Syllabus

Gyanmanjari Institute of Medical Science and Healthcare

Semester-1

Subject: Human and Medical Biology-PGDSI11503

Type of course: Major

Prerequisite: Basic understanding of biology, health, hygiene and public health.

Rationale: This subject provides basic knowledge of human anatomy, physiology and medical biology required for understanding health, disease and prevention. It enables Sanitary Inspector students to relate body functions, infection, immunity and common diseases to public-health practice and health education.

Teaching and Examination Scheme:

Teaching Scheme			Credits	Examination Marks					Total Marks
CI	T	P	C	Theory Evaluation		Practical Marks			
				ESE	MSE	V	P	ALA	
4	0	0	4	60	30	10	00	50	150

Legends: CI-Class Room Instructions; T – Tutorial; P - Practical; C – Credit; ESE - End Semester Examination; MSE- Mid Semester Examination; V – Viva; CA - Continuous Assessment; ALA- Active Learning Activities.

Continuous Assessment:

Sr. No	Active Learning Activities	Marks
1	**Human Body System Chart** Students prepare and explain a labelled chart of major organs and their functions, and upload it on the GMIU web portal.	10
2	**Case-Based Learning** Students connect common symptoms with the affected body system using simple case scenarios, and upload it on the GMIU web portal.	10
3	**Health Education Demonstration** Students prepare an educational presentation on prevention of common infections, and upload it on the GMIU web portal.	10
4	**Reproductive Health Awareness Activity** Students develop age-appropriate educational material on reproductive health, and upload it on the GMIU web portal.	10
5	**Biology Quiz** Group quiz covering anatomy, physiology, immunity and medical biology, and upload the group response sheet on the GMIU web portal.	10
	Total	**50**

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Course Content:

Unit No.	Course content	Hrs	% Weight age
1	**Fundamentals of Human Biology** • Organization of the human body • Anatomical terminology and body planes • Cells and tissues • Structure and functions of major organs • Homeostasis and basic physiological regulation • Basic concepts of health and disease	15	25%
2	**Human Organ Systems** • Digestive system and digestion • Respiratory system and gas exchange • Cardiovascular system and circulation • Urinary system and excretion • Nervous system and coordination • Endocrine system and hormonal regulation	15	25%
3	**Reproductive and Immune Systems** • Male and female reproductive systems • Reproductive physiology and menstrual cycle • Basic concepts of conception and pregnancy • Lymphatic and immune systems • Innate and adaptive immunity • Common disorders affecting major body systems	15	25%
4	**Medical Biology and Public Health** • Microorganisms and human health • Infection, transmission and prevention • Inflammation, immunity and common diseases • Basic genetics and hereditary disorders • Lifestyle-related disorders and prevention • Role of sanitary inspector in health education and disease prevention	15	25%

Suggested Specification table with Marks (Theory):

Distribution of Theory Marks **(Revised Bloom's Taxonomy)**						
Level	Remembrance (R)	Understanding (U)	Application (A)	Analyze (N)	Evaluate (E)	Create (C)
Weightage	20%	20%	20%	10%	10%	20%

Note: This specification table shall be treated as a general guideline for students and teachers. The actual distribution of marks in the question paper may vary slightly from above table.

Course Outcome:

After learning the course, the students should be able to:	
CO1	Describe the organization of the human body, cells, tissues and principles of homeostasis.
CO2	Explain the structure and basic functions of major human organ systems.
CO3	Describe reproductive, immune and basic genetic processes relevant to community health.
CO4	Relate basic medical biology concepts to infection prevention, health education and public health practice.

Instructional Method:

The course may be delivered through lectures, demonstrations, case studies, group discussions, role play, quizzes, brainstorming, field-oriented activities and audiovisual resources.

Students may use supplementary e-learning and government/public-health resources. Internal evaluation may be based on active learning assignments, presentations, quizzes and case studies.

Reference Books:

1. Marieb, E. N., & Hoehn, K. (2019). *Human anatomy & physiology* (11th ed.). Pearson.
2. Seeley, R. R., Stephens, T. D., & Tate, P. (2019). *Anatomy & physiology* (12th ed.). McGraw-Hill Education.
3. Ganong, W. F. (2016). *Review of medical physiology* (25th ed.). McGraw-Hill Education.
4. Barrett, K. E., Barman, S. M., Brooks, H. L., & Yuan, J. X.-J. (2019). *Ganong's review of medical physiology* (26th ed.). McGraw-Hill Education.
5. Moore, K. L., Dalley, A. F., & Agur, A. M. R. (2022). *Clinically oriented anatomy* (9th ed.). Wolters Kluwer.
6. Drake, R. L., Vogl, W., & Mitchell, A. W. M. (2023). *Gray's anatomy for students* (5th ed.). Elsevier.
7. Snell, R. S. (2018). *Clinical anatomy by regions* (10th ed.). Wolters Kluwer.