## 🧬 Module 5: Human Biology - Systems, Health, and Wellness

### *(Science – Human Anatomy, Physiology, and Medical Sciences)*

### 🧬 Core Focus

**The human body is a complex, interconnected system.**  
This module investigates the structure and function of human biological systems, explores health and wellness, and examines the causes and prevention of illness and disease.

### 🧠 Key Concepts & Learning Goals

| Theme | Topics |
| --- | --- |
| **1. Introduction to Human Biology** | - Overview of body systems- Hierarchical organization: cells, tissues, organs, systems- Homeostasis and regulation |
| **2. Skeletal & Muscular Systems** | - Major bones and muscle groups- Movement and support- Injury prevention and care |
| **3. Circulatory & Respiratory Systems** | - Heart, blood, and vessels- Oxygen transport and gas exchange- Health of heart and lungs |
| **4. Digestive & Excretory Systems** | - Nutrient absorption and waste removal- Organs of digestion- Dietary health and hydration |
| **5. Nervous & Endocrine Systems** | - Brain, spinal cord, and nerves- Hormones and regulation- Response to stimuli and stress |
| **6. Immune System & Disease** | - Pathogens, immunity, and vaccines- Common diseases and disorders- Epidemiology basics |
| **7. Reproductive Health & Development** | - Human reproduction basics- Puberty and life stages- Healthy choices and boundaries |
| **8. Wellness, Prevention & Public Health** | - Nutrition, exercise, sleep, hygiene- Mental health and emotional well-being- Public health systems and global health challenges |

### 🧪 Hands-On Activities

* **Body System Diagrams & Models**
* **Pulse & Breathing Rate Experiments**
* **Healthy Plate Nutrition Game**
* **Disease Transmission Simulation**
* **Stress Response Journaling & Reflection**

### 🧩 STEAM Integration

* **Science**: Anatomy, physiology, health sciences
* **Technology**: Medical imaging, fitness trackers, health data
* **Engineering**: Prosthetics, assistive tech, biomedical devices
* **Arts**: Anatomical illustration, health campaigns
* **Math**: Vital statistics, BMI, dosage calculations

### 🌐 21st Century Skills Emphasized

* Health Literacy
* Critical Analysis of Information
* Empathy & Self-Awareness
* Community & Global Responsibility