# Human Body Systems Course No. 14102 Credit: 1.0

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| --- | --- | --- | --- |
| **Student name:**  |  | **Graduation Date:** |  |

Pathways and CIP Codes:Biotechnology

Course Description: **Technical Level:** Human Body Systems is a 1-credit course that engages students while learning the study of processes, structures, and interactions of the human body. Important concepts including identity, communication, power, movement, protection, and homeostasis. Special attention should be given related technical skills, technology, and equipment associated with these professions.

Directions:The following competencies are required for full approval of this course. Check the appropriate number to indicate the level of competency reached for learner evaluation.

**RATING SCALE:**

4. Exemplary Achievement: Student possesses outstanding knowledge, skills or professional attitude.

3. Proficient Achievement:Student demonstrates good knowledge, skills or professional attitude. Requires limited supervision.

2. Limited Achievement:Student demonstrates fragmented knowledge, skills or professional attitude. Requires close supervision.

1. Inadequate Achievement:Student lacks knowledge, skills or professional attitude.

0. No Instruction/Training:Student has not received instruction or training in this area.

## Benchmark 1: Identity

### Competencies

| **#** | **DESCRIPTION** | **RATING** |
| --- | --- | --- |
| 1.1 | Upon completion of this section the student will be able to demonstrate measurable understanding of unique characteristics, like DNA, and common characteristics, like tissues, that together make up the identity of each of us. |  |
|  | * Cellular organization
 |  |
|  | * DNA
 |  |
|  | * Transciption, translation, and enzymes
 |  |
|  | * Behavioral characteristics of humans
 |  |
|  | * Anatomical organization
 |  |
|  | * Directional and regional terminology
 |  |
|  | * Body systems
 |  |
|  | * Tissues: connetive, nervous, muscular, epithelial
 |  |
|  | * Bones: identification, types, location
 |  |

## Benchmark 2: Communication

### Competencies

| **#** | **DESCRIPTION** | **RATING** |
| --- | --- | --- |
| 2.1 | Upon completion of this section the student will be able to demonstrate measurable understanding of the brain and its connection to the entire body and external world through nerves via chemical signals. |  |
|  | * Homeostasis
 |  |
|  | * Subdivisions: CNS and PNS
 |  |
|  | * Role of the nervous system: stimulus, interpret, effect a response
 |  |
|  | * Brain anatomy
 |  |
|  | * Neurotransmitters
 |  |
|  | * Cells and supporting cells
 |  |
|  | * Reflexes
 |  |
|  | * Endocrine systems and hormones
 |  |
|  | * Eye anatomy and physiology
 |  |

## Benchmark 3: Power

### Competencies

| **#** | **DESCRIPTION** | **RATING** |
| --- | --- | --- |
| 3.1 | Upon completion of this section the student will be able to demonstrate measurable understanding of the brain and its connection to the entire body and external world through nerves via chemical signals. |  |
|  | * needed resources: food, water, and oxygen
 |  |
|  | * internal factors: age, weight, and overall health
 |  |
|  | * external factors: climate or temperature
 |  |
|  | * digestive system anatomy
 |  |
|  | * mechanical and chemical digestion
 |  |
|  | * balancing energy consumed with energy used
 |  |
|  | * ATP
 |  |
|  | * respiratory system anatomy
 |  |
|  | * inspiration and expiration
 |  |
|  | * disease and medical conditions of the RS
 |  |
|  | * urinary system anatomy
 |  |
|  | * filtration, reabsorption, and secretion
 |  |
|  | * hormones of the US
 |  |
|  | * imbalance of fluid and electrolytes
 |  |

## Benchmark 4: movement

### Competencies

| **#** | **DESCRIPTION** | **RATING** |
| --- | --- | --- |
| 4.1 | Explain the relationship between the heart and the lungs and trace the path of major circulatory routes. |  |
|  | * skeletal system anatomy
 |  |
|  | * joints: functional and structural classifications
 |  |
|  | * muscular system anatomy
 |  |
|  | * muscle contractions
 |  |
|  | * cardiovascular system anatomy
 |  |
|  | * circulatory system anatomy
 |  |
|  | * gross anatomy of bones
 |  |
|  | * effects of life choices: poor diet, smoking, and drug use
 |  |
|  | * exercise physiology
 |  |

## Benchmark 5: protection.

### Competencies

| **#** | **DESCRIPTION** | **RATING** |
| --- | --- | --- |
| 5.1 | Upon completion of this section the student will be able to demonstrate measurable understanding of the shared responsibilities of the integumentary system, the skeletal system, and the lymphatic/immune system to offer protection on the inside and outside of the body. |  |
|  | * components of the integumentary system
 |  |
|  | * functions in protection from the integumentary and skeletal system
 |  |
|  | * temperature regulation
 |  |
|  | * sensation
 |  |
|  | * excretion and absorption in the human body
 |  |
|  | * bone composition (flexibility and change overtime due to usage)
 |  |
|  | * specialized cells in the skeletal system (osteoclasts and osteoblasts)
 |  |
|  | * fracture types
 |  |
|  | * bone remodeling and healing
 |  |
|  | * functions of the lymphatic/immune system
 |  |
|  | * antibodies
 |  |
|  | * immune cell identification and functions
 |  |

## Benchmark 6: Homeostasis

### Competencies

| **#** | **DESCRIPTION** | **RATING** |
| --- | --- | --- |
| 6.1 | Upon completion of this section the student will be able to demonstrate measurable understanding of a person’s ability to maintain an internal state regardless of external factors always acting upon the body. |  |
|  | * external factors acting upon the body
 |  |
|  | * coordination of all body systems working together to maintain health and wellness
 |  |
|  | * medical interventions (preventative, diagnostic test, treatments, and rehabilitation)
 |  |

I certify that the student has received training in the areas indicated.

Instructor Signature:

For more information, contact:

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