### Anatomy and Physiology

1. **Course title:** Anatomy and Physiology (2)
2. **Course Number:** (202)
3. **Credits Hours:** Total (4) credits:
   - Theory (3) credits
   - Lab. (1) credits
4. **Course Calendar:** Total (5) hours weekly of 15 week:
   - Theory (3) hrs.
   - Lab. (2) hrs.
5. **Placement:** Second year / First semester
6. **Instructors:** Asaad Ismail Ahmed, Ph.D., Mineral Metabolic Physiology and other staff of physiology.

### Course Description:
This course is designed to provide the nursing students with basic theoretical and laboratory knowledge about different human systems, their locations in the human body, and their functions. It also provides information about the mutual interaction between cells, tissues, and organs of these systems in performing their functions and maintaining the internal environment in a stable condition.

### Course Goals:
At the end of the course the student will be able to:

- Recognize the structures and functions of the body (cells, tissues, organs and systems).
- Know the mechanism of the normal body functions.
- Understand the relation between structures and functions of the different parts of the body.
- Practice different diagnostic tests.

### Course Outline:
The Theoretical Content

Unit 1: Blood: (8) hrs.
- Blood cells; morphology and functions.
- Regulation of blood cells production.
- Plasma; constitution and functions.
- Blood clotting and anticlotting system.
- Functional disorder of blood.

Unit 2: Heart and Circulation: (8) hrs.
- Structure of the heart, vascular and lymphatic systems.
- Cardiac cycle and heart sounds.
- Heart beats and electrocardiogram.
- Cardiovascular regulation mechanism.
- Functional disorders of heart and circulation.

Unit 3: Endocrine Glands: (8) hrs.
- Chemical messengers.
- Structure and functions of hypothalamus.
- Structure and functions of pituitary gland.
- Structure and functions of thyroid and parathyroid glands.
- Structure and functions of adrenal gland and thymus.
- Functional disorders.

Unit 4: Reproductive System: (8) hrs.
- General terminology and concepts.
- Anatomy of male and female reproductive systems.
- Hormones control of male and female reproductive systems.
- Pregnancy.
- Parturition and lactation.
- Functional disorders.

Unit 5: Urinary System: (6) hrs.
- Anatomy of urinary system.
- Renal function.
- Renal circulation.
- Micturition.
- Renal function tests.
- Effect of disordered renal functions.

Unit 6: Sensory System and Reflexes (7) hrs.
- Somatic sensation.
- Vision.
- Hearing.
- Smell.
- Reflexes as component of control system.
- Functional disorders.

**The Laboratory Content**

Unit 1: Blood tests: (12) hrs.
- Red cell count.
- Hemoglobin concentration.
- Hemotocrite.
- Mean corpuscular volume.
- Mean corpuscular hemoglobin concentration.
- White cell count.
- Differential count.
- Platelet count.
- Blood group test.
- Cloting time.

Unit 2: Measuring blood pressure. (2) hrs.

Unit 3: Measuring body temperature (2) hrs.

Unit 4: Urine analysis (2) hrs.

Unit 5: Measuring renal clearance (2) hrs.

Unit 6: Study ECG (2) hrs.

Unit 7: Measuring body mass index (2) hrs.

Unit 8: Blood tests (enzymes, glucose, & lipid profile) (2) hrs.

Unit 9: Measuring lung volume and lung capacity (2) hrs.

Unit 10: Note in x-ray, computerized tomography (CT) and magnetic- resonant image (MRI) (2) hrs.

**10. Learning Resources:**
Board, Overhead Projector, Posters and Laboratory Equipments.
11. Teaching/ Learning Strategies:
Lecture, group discussions, Demonstrations and Laboratory work.

12. Students Evaluation:

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<thead>
<tr>
<th>Evaluation</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>1st theory exam</td>
<td>18 %</td>
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<tr>
<td>2nd theory exam</td>
<td>17 %</td>
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<tr>
<td>Lab activity and exam.</td>
<td>15 %</td>
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<tr>
<td>Final theory exam</td>
<td>35 %</td>
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<tr>
<td>Final lab exam</td>
<td>15 %</td>
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</tbody>
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Total                                 100 %

13: References:

- Winwood, R.S. and Smith, J.L., Anatomy and Physiology for