Chapter 5: The Skeletal System

I. Bones: An Overview

Objectives:
- Identify the subdivisions of the skeleton as axial or appendicular.
- List at least three functions of the skeletal system.
- Name the four main classifications of bones.
- Explain the role of bone salts and the organic matrix in making bone both hard and flexible.
- Describe briefly the process of bone formation in the fetus, and summarize the events of bone remodeling throughout life.
- Name and describe the various types of fractures.

A. Functions of the bones (list and describe)

B. Classification of bones

1. Compact vs. spongy bone

2. Bone shapes

C. Structure of a long bone

1. Gross anatomy
   a. Structure

   b. Medullary cavity & marrow
c. Types of bone markings

2. Microscopic anatomy

D. Bone formation, growth and remodeling

1. Fetal skeleton

2. Process of ossification

3. Bone remodeling

E. Bone fractures

1. Description

2. Events of bone repair

(Skip axial and appendicular skeleton sections)

II. Joints

<table>
<thead>
<tr>
<th>Objectives:</th>
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<td>• Name the three major categories of joints, and compare the amount of movement allowed by each.</td>
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A. Functional classification of joints
B. Structural classification of joints

C. Fibrous joints

D. Cartilaginous joints

E. Synovial joints
   1. Features
      a. Articular cartilage
      b. Fibrous articular capsule
      c. Joint cavity
      d. Reinforcing ligaments
   2. Bursae and tendon sheaths

F. Types of synovial joints based on shape
   1. Plane joint
   2. Hinge joint
   3. Pivot joint
   4. Condyloid joint
   5. Saddle joint
   6. Ball-and-socket joint

G. Arthritis
1. Description

2. Osteoarthritis

3. Rheumatoid arthritis

4. Gout

III. Developmental Aspects of the Skeleton

Objectives:
- Identify some of the causes of bone and joint problems throughout life.

1. Long and flat bone development

2. Development of the skull

3. Development of the vertebral column

4. Change in size and shape of the skeleton

5. Osteoporosis