The humerus is the largest and longest bone of the upper limb; it has a shaft and expanded proximal and distal ends. The rounded proximal end articulates with the glenoid fossa of the scapula at the shoulder (glenohumeral) joint, while the 'condylar' distal end articulates with the radius and ulna to form the elbow joint.

The Proximal End (Head)
The proximal end has a head, neck and greater and lesser tuberosities. The almost hemispherical head faces postero-medially and is directed superiorly. The articular surface is covered with hyaline cartilage. It is joined to the shaft by the slightly constricted neck separating the head from the supero-lateral greater and distinct anterior lesser tuberosities, between, which is the intertubercular groove. The greater tuberosity has three distinct impressions, while the lesser tuberosity has a single smooth impression. Below the tuberosities is an ill-defined surgical neck.

The shaft is cylindrical proximally but prismatic (in section) distally and compressed antero-posteriorly. It has three borders (anterior, lateral, medial) and three surfaces (antero-lateral, antero-medial, posterior). The anterior border runs from the front of the greater tuberosity to the distal end of the bone. Its upper third forms the lateral lip of the intertubercular groove marked by muscular attachments. The lateral border runs from the posterior aspect of the greater tuberosity to the lateral epicondyle, the distal part being the lateral supracondylar ridge. It is interrupted by a radial (spiral) groove descending obliquely laterally and forwards. The medial border runs from the crest of the lesser tuberosity to the medial epicondyle although for most of its course it is indistinct. Its upper part forms the medial lip of the intertubercular groove and the distal part the medial supracondylar ridge.

The antero-medial surface is continuous with the intertubercular groove. The smooth antero-lateral surface is roughened at its midpoint by the deltoid tuberosity, while the extensive posterior surface is crossed by the radial groove.

Ossification
The humerus ossifies from eight centers. A primary ossification center appears in the shaft during the eighth week in-utero. At the proximal end, secondary centers appear in the head by six months, the greater tuberosity in the second (females) or third (males) year, and the lesser tuberosity in the fourth (females) or fifth (males) year all fusing by the sixth year to form a single cap of bone. This fuses with the shaft between the ages of 18 and 20 years in females and 20 and 22 years in males. At the distal end, secondary centers appear in the capitulum during the first year, for the trochlea during the ninth (females) or tenth (males) year and lateral epicondyle by the age of 12 years. These centers unite at puberty and fuse with the shaft by the age of 14 (females) or 16 (males) years. A secondary center appears in the medial epicondyle in the fourth (female) or sixth (males) year separated from the other epiphyseal centers by an extension of the shaft, it fuses with the shaft by the age of 20 years.

Glenohumeral Joint
This is a synovial ball and socket joint between the shallow glenoid cavity of the scapula and the hemispherical head of the humerus. The glenoid cavity is deepened by the glenoid labrum, a ring of fibrocartilage attached to the boundaries of glenoid fossa. The articular area of glenoid and labrum is less than a third of the area of humeral head.

The circumflex humeral and suprascapular arteries and axillary and suprascapular nerves supply the joint.

For more information on the Shoulder, see 'The Interactive Shoulder'.